

ing in the tetragonal, hexagonal and orthorhombic systems, might be made general, viz., that when only one axis of symmetry is present this is set as the *vertical* axis.

2. That diameter which alone is distinguished from all those adjacent to it by its unique character would receive the unique treatment of vertical location, as is now the case in the tetragonal and hexagonal systems.

3. The lateral axes would, with this setting, be distinguished as the macro- and brachy-axes, as in the orthorhombic and triclinic systems. Every teacher realizes what a store of mental energy this would set free for more profitable application than its present task of keeping in their proper places the prefixes clino-, ortho-, macro- and brachy-.

4. The familiar spherical projections which Groth has used to show the kinds of crystal symmetry, and which are now widely used, would then have the same relative position in the monoclinic as in the other systems.

5. The failure of positive forms to occur in the upper front right octant could be obviated by placing acute β at the right of the observer, thus removing another unnecessary stumbling-block from the path of the learner.

The undersigned would be very glad to see an expression of opinion by any interested readers as to the desirability of making this change in the conventional position of monoclinic crystals.

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CORNELL UNIVERSITY,
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QUOTATIONS

UNIVERSITIES AND INTELLECT

THIRTY-SEVEN years ago next fall Johns Hopkins University was opened, upon an endowment estimated at less than \$3,500,000. Yesterday, it was stated that the budget adopted by the trustees of Columbia University for the expenses of the coming academic year amounted to \$3,450,000. The foundation of the University at Baltimore was widely acclaimed as an event of the highest importance and the most hopeful augury. Never before had the income of so large a fund been placed at the disposal of the trustees of any new

American institution of learning; and the Johns Hopkins trustees had, in the choice of its president, and in the announced plans of the institution, made it plain that their opportunity was to be so used as to give to the higher intellectual life of the country a great and long-needed stimulus. The hope was entertained that the new university would be the means of introducing in America what had so long been vainly desired by scholars and scientists—the true university, in the European sense of the term. And that hope was not disappointed. The foundation of Johns Hopkins University marked the beginning of a distinctly new era in the history of higher education in America. What had formerly been the rare pursuit of a devoted scholar here and there has become the regular occupation of thousands of students in scores of colleges and universities. In many a field of research our country now makes contributions which, in point of quantity and sometimes also in point of quality, stand well alongside those of the leading nations of Europe; whereas, before the new start made in 1876, it was only some unusually gifted or ardent mind that went beyond the mere acquisition of the results of foreign learning and investigation.

In compassing with what would now be regarded as small means so signal an achievement, one cardinal feature of the policy pursued by President Gilman and the Johns Hopkins trustees was essential. There was one thing to which every effort was directed, every energy bent—the securing of the highest possible quality in the professors. A small group of real intellectual leaders formed the nucleus of the faculty; and in adding to them younger men in the various departments the keenest interest was constantly maintained in the discovery of unusual talent or exceptional attainment. Those who were at the university in its early years testify unanimously to the extraordinary exhilaration and inspiration of the atmosphere thus created. The buildings were extremely modest, and in large part of a makeshift character, being old residences altered at slight expense; the warning given by Huxley, in his notable address at the open-

ing, against putting into bricks and mortar what ought to be invested in brains, was rather by way of accentuating a policy already pursued than of advising its adoption. The revenue from the endowment proved to be even less than had been expected; much, it was felt, had to be done in the way of ordinary collegiate instruction to meet the needs of time and place; and if, with the means available for the distinctive purposes of the university, so great an impetus was given at Baltimore to the university idea in America, this must be ascribed, above all else, to the clear recognition of the prerogative of intellectual superiority as the one touchstone of university distinction.

The Columbia budget of \$3,450,000 is typical of the present-day expenditures of our larger universities. That they accomplish great results, results of extensive and varied usefulness, no one would deny. They cover a field much larger than that which formerly comprised the activities of our institutions of learning. They do much to promote civic enlightenment, and assist concretely in the solution of many problems of government. But we doubt whether any one would so much as claim that the enormous enlargement of university expenditure has been attended with any such nourishment of high intellectual standards or ideals as might have been hoped. Indeed, many a man may be tempted to compare in this respect the big and rich universities of to-day with the struggling institutions of half a century ago to the decided disadvantage of the present. The roster of the faculty becomes ever longer and longer; but how many of the names are such as it will thrill the students to recall thirty or forty years hence? There is always danger, in such matters, of the illusion of fond memory; the shining names of teachers under whom students were proud in after years to recall that they had sat were never very numerous. Still, it ought to be possible, out of the thick volume of professors' names in the catalogue of any of our leading universities, to single out a goodly list of those whose eminence is unmistakable and impressive, whose influence counts

as a great intellectual or spiritual force, whose presence gives to the university significance and dignity, to the enjoyment of whose instruction or inspiration the student will look back in after years as a never-to-be-forgotten privilege. Some such there are; but, in comparison not merely with an ideal possibility, but with what is actually found in foreign universities, they are extremely few and far between.

In comparison with this question, all matters of mere "management" are trivial. And it is for this reason, more than any other, that we have always regarded the magnifying of questions of administration in our American universities as so deplorable. To get men of real power into the professorships—that is the great problem. The question of salaries is undoubtedly a great stumbling-block; though even here the magnifying of administration adds to the difficulty, for a due recognition of the paramount importance of the professor would naturally tend to the making of such salaries as are needed to render professorships fairly attractive in a material sense. But important as this material side is, even more important are the less tangible elements that fix the character of the professorial life. These can not be had, indeed, simply by taking thought; the slow growth of tradition, and the temper of the national life as a whole, are preponderating factors. But we may help the growth of the tradition; and we may modify the influence of the national temper on the subject, for better or worse. As far back as Tyndall's visit to this country, in the early seventies, the British scientist took occasion to exhort his American audiences to prevent such waste of scientific genius as he found going on here, as illustrated in the case of Joseph Henry, abandoning physical research for administrative duties. We must make the life of the scholar and scientist attractive not merely in point of salary, but in point of honor, of leisure, of sympathetic environment; and all other tasks of university presidents and university trustees are of small moment in comparison.—New York *Evening Post*.