tions of bees from the British and Berlin Museums. When I have finished working on them there will be more than a hundred types of new species, and all of these must go back to London and Berlin by express. Owing especially to the carelessness of custom-house officials, there is a genuine enough risk of damage. These very collections were injured on the way here, because the officials in New York unpacked them, and repacked them carelessly, so that the sides of the insect-boxes rested against those of the outer cases. Nevertheless, it seems that the whole transaction is worth while. The damage, if any, will not be great, and the museums in question will be enriched by a large amount of type material.

My own collection of bees, containing hundreds of types, is in a good but not fire-proof building. When I die, it is intended to transfer it to the National Museum. Some years ago I sent most of my types to Philadelphia and Washington, where they now are. Recently, I have refused to part with any, concluding that the material is safer and more useful in my own custody, where it is continually being studied. There is some risk here, but with apparently adequate compensating advantages.

In the case of the types which I have loaned, it may be plausibly argued that I should not take the risk of having them returned by mail or express. I am so far convinced by this that some of them, which are in trustworthy institutions, will be permitted to stay where they are. Others, now in private hands, may be placed in such institutions. One word may be added concerning the purchase of types by institutions. The natural outcome of the work of the proposed committee will be to make it more or less obligatory for students to leave their type material to the larger museums. Many will do this in any case. Unfortunately, these museums will usually take every advantage of this condition, and will either expect to receive the material gratis, or pay as little as possible for it. Naturalists are commonly ill-provided with convertible riches, and often their collections, the work of their lives, are their most valuable assets. It is not fair that they should be virtually compelled (as in a number of actual cases I could cite) to give them away to the public, without any pretense of an adequate return. Possibly a special type fund might be raised to meet this condition, but there might be some danger that if describing became too profitable (through the sale of types) it would become commercialized, with results awful to contemplate! This difficulty could be overcome, no doubt, by keeping the prices at an optimum which would avoid both extremes, and by the vigorous condemnation of reckless work. Prices might also vary according to the character of the work represented by the collections.

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University of Colorado,
June 9, 1910

Medical Education

To the Editor of Science: The teaching of medicine in the United States is notoriously antiquated, ill-organized and open to commercial influences. To most doctors concerned for the future the publication of "Bulletin No. IV." of the Carnegie Foundation for Teaching is an occasion of importance and the precursor of great things. It is a pity then that the editor of the *New York State Journal of Medicine* should have conceived such a distaste for the authoritative style of the writer of the bulletin as to limit his praise to an acknowledgment in ten words that "much useful information and valuable criticism" are contained in it, and to abuse it in four columns.

Mr. Flexner's conclusions are hardest for the editor to accept because presented with vigor and finality. But this is as it should be: a work for the reform of established abuses can not proceed with apology or hesitation. If the author observe fairly and judge impartially, he must drive home his conclusions with all the weight that conviction can give them—and this is what the bulletin does. There are many who have a direct interest

against reform; there are others who find it painful to change from methods which were useful and the best in their day, and who resent criticism of them; much crass opposition has to be overcome. For this task detachment from the profession was necessary. It was an extraordinary advantage, therefore, that the work should have been undertaken by one of the leading pedagogical authorities of the United States: pedagogy is one of the greatest of sciences because it serves all others, and it deserves the warmest welcome from our profession. Starting from this favorable approach, Mr. Flexner has been able to add the assistance and advice of such men as Dr. Welch, Dr. Simon Flexner and Dr. Bevan to his own power of diagnosing the causes of evil, his inescapable criticism and incisive style, and his comprehensive vision for solutions. And for the report prepared under this fortunate combination of circumstances and abilities the widest circulation has been made possible by "access to the pocket of a multimillionaire."

The reviewer ridicules the condemnation of proprietary and fee-dividing schools by arguing that four of the faculty of Johns Hopkins (which in the bulletin is held up as the model for medical schools) were graduates of such institutions. It may be asked where men were to be obtained when this school was founded except from the proprietary and fee-dividing schools; there were no others. It may, with like reasonableness, be asked why those who were brought up under the old method devised the new one, unless they thought it better. In the case of these men we are not left to inference; they have spoken and written against the method under which they were educated. They lend their names also to the authority of this bulletin.

The inherent vice of the argument is apparent. The issue is not whether Dr. A. is a skilled surgeon or Dr. B. a capable physician, but whether we can better our medical teaching. Defence of a school system because distinguished doctors have come out of it, is in logic the method of the empiric in medicine. A logic which opposes the names of individual "giants" produced by old and vicious systems of education to proposals of better instruction for all in the future, would carry us crab-like to the schools of Ambroise Paré and Vesalius, and eventually to the times of Galen and Hippocrates as the golden period of medical education.

Mr. Flexner's advocacy of laboratory and hospital work is marred for this writer by supposed injustice to the value of didactic teaching. The bulletin does not urge its abandonment: it lays the emphasis where in the study of a science it is needed, namely, upon contact with facts, with observed causes and consequences. The medicine of to-day rests, to an extent undreamed of in the past, upon the scientific foundation of laboratory and hospital knowledge, and acquaintance with details at second hand no longer suffices. Students will not be satisfied with looking on while some one else does the work; they will insist on working with their own hands and their own brains on real facts. The best law-teachers found this out when they supplanted the abstractions of text-book teaching with the close study of real lawsuits. The study of books alone will make good examination candidates, but it will not make good doctors: skill is defined as "personal expertness or dexterity," and the world is less in need of men who can quote text-book descriptions of diseases than of men who are "skilled" to cure. Handling of facts is the basic thing, and then supplementary information and breadth of view may be had from didactic teaching. As the bulletin says:

> The lecture—hugging as closely as may be the solid ground of experienced fact—may therefore from time to time be employed to summarize, amplify or systematize.

The editor's final perplexity is over Mr. Flexner's insistence upon a connection between medical school and university. "Until recently," the reviewer says, he himself "thought it of enormous advantage for a medical school to be in close relationship with a university." The phraseology leads to the conjecture that he thinks so no longer, and that in a brief period of his cogitations what was recently

"enormous" has shrunk to a negative quantity. An outline or explanation of his views on this important and complex question would have profited our understanding of his conversion, but he does not give them. Two inconsiderable items of college gossip are mentioned, but we can not believe that they form the basis for so radical a change of heart on so broad a question.

One of these items is the rumor that Columbia University is about to establish a course in optometry. The reviewer himself does not think it "possible that so treacherous a blow would be struck at its medical department by the university." There is no occasion to find fault with this hopeful opinion which is wholly in accord with the facts, and controversy is impossible where agreement is complete. It may be remarked, however, that whether the university may or may not have done good to the medical school, the connection with the medical school (if the reviewer's reasoning be correct) has in fact kept out quackery which might otherwise have entered the university. This is a reason for the connection which had not occurred to Mr. Flexner, and the credit for it should be given to the editor of the *New York State Journal of Medicine.*

The second item of the reviewer is that the presidents of the universities of three medical schools were appealed to for help in last winter's battle with the anti-vivisectionists, and refused because they feared to lose contributions from "persons of large wealth." The implied argument that, in general, managers of proprietary and fee-dividing institutions, or even of separately endowed schools, are less in need of money than universities, and therefore more likely to be defiant of ignorant public opinion, deserves no serious consideration. The instance with which the writer attempts to support it rests upon a double innuendo: the innuendo of fact, that a duty rested upon the three presidents to make "personal appearance upon the platform" and that none of them appeared, is in both respects erroneous; the innuendo of motive, that the attitude towards the question of Dr. Butler, Dr. Schurman and Chancellor McCracken was controlled by their timid venality, may be left for them to answer—if there be anything in it worth answering.

Reviews of this character are to be expected. The instinct of conservatism—contentment with what is familiar—begets tradition; the break-up of tradition goes counter to this natural tendency of the mind, and often gives pain. The reformer is disliked for giving pain, and found guilty of "innovation," "arrogance" and "self-sufficiency." Even the most intelligent and profound study of conditions does not absolve him from this personal attack; such study rather intensifies it, for the more penetrating his examination of the facts, and the more unanswerable his conclusions, the less there is to be said about them and prejudice has the more to confine itself to indefinite personalities.

The epithets that are certain to be directed against Mr. Flexner need not, therefore, chafe him. If medical education have in it germs of progress, it will go forward along the lines he indicates. The best schools will adopt them; some of the inferior schools will change more slowly; others will linger and die. Imperceptible gradations between the apparent stages, and against sincere and insincere opposition, progress will come.

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QUOTATIONS

THE NEW COLLEGE IN THE WEST

That a new college, however well endowed, is about to be added to the great array of colleges and universities now existing in the country, would not, of itself, be matter for special notice outside the section immediately affected. But the statements that have been made about the plans and purposes of Reed College, the institution to be opened a year hence at Portland, Ore., are of a character to attract great interest, especially when the nature and value of college education are the subject of such active discussion and controversy. There are at least two points of great