Professor A. W. Crossley has been appointed to a university chair of chemistry, tenable at King's College.

Discussion and Correspondence

The Conferring of the Bachelor's Degree upon Non-Graduates

The question of giving degrees to non-graduates who for various reasons have failed to obtain them while resident students is one that faculties of colleges and technical schools are frequently called upon to decide. Every year students leave college because of illness, financial embarrassment, lack of interest, defective scholarship and sometimes misconduct.

Some of them enter other institutions or subsequently return to their own college, and, after fulfilling all requirements, receive their degrees. Others enter business or professions in which they become so occupied that they find it impossible to take the time necessary for the completion of their collegiate residence and training.

Such men often attain distinction in their professions or prominence in other ways, and apply for degrees, being urged thereto by some admiring former classmate, or at the solicitation of some member of the faculty, who is enthusiastically appreciative of their continued interest, financial or otherwise, in the college. It is not easy to understand why one who has attained distinction in his profession should seek an undergraduate degree when such degree signifies nothing beyond the fact that the possessor, prior to his entering his profession, has completed a prescribed course of study in preparation therefor.

The applying for and the granting of a degree on any other basis than its being earned puts an abnormal importance on the degree itself and stamps the recipient with a misleading trade-mark.

Investigation shows a wide variation in this practise among prominent universities, colleges and technical schools. Some grant no degrees except for the completion of a prescribed course in residence; others accept a certificate for the performance at another institution of such part of the work or its equivalent as the candidate may lack; and then there are some which grant degrees on a minimum residence of two years with "fair" standing, honorable dismissal and a "creditable" record varying from ten to twenty-five years subsequent to leaving college.

During the past two years this question of granting degrees to non-graduates has been repeatedly brought to the attention of the faculty of the Worcester Polytechnic Institute and a committee was appointed to investigate the matter. In order to ascertain the practise in other institutions a circular letter asking for information was sent to all universities, colleges and technical schools on the accredited list of the Carnegie Foundation. Also a letter was sent to most of the graduates of the Worcester Polytechnic Institute who have been or are now engaged in teaching, to ascertain their views on the question. This committee after careful consideration of all the information which had been assembled brought in a report which was unanimously adopted by the faculty. Since a number of institutions with which the committee corresponded expressed the desire to be informed as to the conclusions reached, it has seemed best to publish the whole report.

Report Submitted to the Faculty of the Worcester Polytechnic Institute

The committee to which was referred the question of providing some means whereby degrees may be conferred upon non-graduate students submits the following report:

1st. That the committee recommend that the degree of Bachelor of Science be conferred only on those who have completed one of the courses of study prescribed at this institute as leading to that degree.

2d. That in the opinion of the committee it is not wise to grant any honorary degree to a non-graduate; but in the opinion of the committee the names of all former students should be printed in some official publication of the institute.

The general reasons which have influenced the

committee in making the recommendations are as follows:

1. We have great respect for those who have left the institute without completing a course and have nevertheless been successful in their profession; but we do not believe that, in general, such men feel the need of a degree or wish the institute to lower its present high standing among engineering schools by granting unearned degrees.

Replies to inquiries sent to all of our graduates, who are engaged in educational work and who are in a position to feel the responsibilities and appreciate the importance of maintaining collegiate standards, show that there is no general demand on the part of graduates that such degrees should be granted and that many graduates are strongly opposed to the plan.

2. A Bachelor's degree as granted by an engineering school is essentially a certificate that the recipient has completed a course of study in preparation for the practise of engineering. Such a certificate can not honestly and honorably be granted to one who has not completed the work specified as necessary.

3. It does not seem possible to devise any method of granting the Bachelor's degree to one who has not completed a specified course of study, without lowering the value of the degree for the regular student and for those who have fully earned the degree.

4. If the definite requirement of a completed course of study were once abandoned there would be no definite halting point in the process of reducing the arbitrary and fluctuating requirements that might from time to time be substituted. The result would probably be an undignified struggle to modify the requirements so as to meet exceptional cases and in the process we should be likely to cause as much disappointment as satisfaction among our non-graduates.

5. We have received information from 60 of the prominent universities, colleges and technical schools as regards their practise in the matter. Of these, 44 do not confer the Bachelor degree on any one who has failed to complete a prescribed course; 14 grant degrees with more or less regularity on the basis of subsequent merit, one has granted two such degrees and one has granted degrees in two instances for a large amount of subsequent research.

A study of the replies leads us to believe that in general the institutions which grant unearned Bachelor's degrees find the system a source of difficulty and dissatisfaction and some of the replies are decidedly apologetic and defensive.

We believe the existence of such a system is a discredit to higher education in general and that the movement is away from it. One leading university has already abandoned it after long trial, and another is endeavoring to get rid of it. We think that it would be a serious mistake for the institute at the present time to adopt what we regard as a discredited and discreditable practise.

W. L. JENNINGS

MULTIPLE FACTORS VS. "GOLDEN MEAN" IN SIZE INHERITANCE

GROTH's preliminary note on the "golden mean" in the inheritance of sizes in SCIENCE of April 17, 1914, pp. 581–584, deserves the attention of geneticists. Its publication is of such recent date that I need only call attention to one or two points that seem to me of particular moment.

In brief, Groth's hypothesis is that the mode of inheritance in F_1 not only of surfaces and volumes, but also of linear dimensions is to be expressed by $\sqrt{ab}$ rather than by $a+b/2$ where a and b are parent sizes. The hypothesis is based upon measurements of a large number of tomato fruits of parental and F_1 plants. It will certainly be worth determining whether Groth's expression fits size characters in other plants. A hurried examination of data, both published and unpublished, derived from my own studies of seed size in beans and maize, indicates that F_1 sizes are nearer the average than the geometric mean of the parent sizes. But my object now is not to lay stress upon any possible agreement or disagreement between my results and those of Groth. It is rather with the relation of Groth's hypothesis to the idea of multiple factors that I am here concerned.

That Groth's hypothesis is essentially Mendelian is shown by the fact that his size factors are assumed to segregate in equal numbers in the gametes of F_1 plants. That he regards his hypothesis as entirely unlike