

## II. — Theoretical Scientific Teaching, i.e. The Degree Course.

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ordinary or pass degree in a group of subjects or an Honours degree in a much more limited number of subjects, and often only one subject. The fourth year is given up wholly to the professional training, which is entirely divorced from the academic or scientific training, and may, indeed, be taken at a different university.

It should be made clear that while opportunities for training exist, there are no regulations laying down that training, or indeed a University degree, is necessary for teachers of Secondary schools. The following figures may, however, be interesting. In 1913, of the men teaching in Secondary schools, 71.6 per cent. were graduates, 37.5 per cent. were trained and 27.9 per cent. were trained graduates; the corresponding figures for the women being 52.3 per cent., 47.4 per cent. and 29.7 per cent. In 1931, of the men, 83.6 per cent. were graduates, 49 per cent. were trained and 44 per cent. were trained and graduates; corresponding figures for the women being 65.5 per cent., 46 per cent. and 39 per cent. It will be seen that nowadays the great majority of the teachers are graduates. The Honours graduates in Mathematics will usually have a good knowledge of Applied Mathematics, Mechanics, and Physics, but not necessarily of Philosophy, History or foreign languages. Of the pass graduates the majority—those who hold a Science degree—will have some knowledge of the same subjects, but the others, with an Arts degree, may have combined Pure Mathematics with literary subjects.

Four Year students, *i.e.* those who are taking a three-year degree course of academic study, followed by a year of professional training in a University Training Department, are eligible for grants towards their tuition and maintenance from the Board of Education provided that they intend on the completion of their course to teach in state-aided schools. The tuition grant for the degree course varies with the fees charged and is, as a rule, sufficient to meet the whole of the fees. The tuition grant for the postgraduate training is £35; at some University Training Departments this covers the charges, at others the students pay a fee. The maintenance grant in each of the four years is £43 for a man and £34 for a woman, if resident in a college or recognised hostel; £26 for a man and £20 for a woman if not so resident.

## II. — THEORETICAL SCIENTIFIC TEACHING, *i.e.* THE DEGREE COURSE.

The preparation for the degree in the case of Mathematics (pure, applied, and mechanics) is carried out almost entirely by means of lectures, exercises, and preparation. The number of lectures in these subjects would vary considerably, but in many cases would be about ten to twelve per week. The time given to exercises and preparation

would depend entirely on the student. Usually in the degree course little or no attention is given to the Foundations of Mathematics, the History of Mathematics, or practical work in Mathematics.

Students taking the ordinary or pass degree commonly take Physics, and sometimes Physics and Chemistry, as well as Mathematics, though certain other subjects could be chosen in place of them. In these branches of Science the teaching is by means of lectures, exercises, preparation, combined with a considerable amount of experimental work in the laboratories.

This theoretical preparation is tested by the University degree examinations. There is no Government examination.

### III. — PROFESSIONAL TRAINING.

The professional training may vary in details in the different University departments, but normally students will have had courses in: The Principles of Education. — General Methods of Teaching. — Educational Psychology. — Educational Hygiene. — The History of Education.

In addition the course must include practice in teaching under supervision in a school, and students who have not had previous teaching experience must spend at least twelve weeks in such practice.

The actual amount of instruction in the methods of mathematical teaching given by the University Training Department varies very considerably. The lessons may be given by a member of the university staff, or by someone who is teaching or has taught in schools and is specially engaged for this purpose. The extent of such courses may vary from very little to a thorough discussion of methods, applicable to pupils to the age of sixteen.

The period of practical training may be made up of three separate months at different points of the year of training, and these three months may be spent at different schools. On the other hand, the period of training may be one of three months taken consecutively in one school. During the period of practical training the student commonly is treated in the same way as a junior member of the teaching staff, with similar privileges, etc. The student who intends to teach Mathematics will be under the immediate direction of the Head Master (if he is a mathematician) or of the Chief Mathematical Master, and will spend his time in hearing lessons, giving lessons in the presence of the regular teacher, and, later on, taking complete charge of classes. In a large school where there may be four or five Mathematical teachers there will be plenty of opportunity for him to see how different parts of the subject are presented, and,