

the Sir William Dunn School of Pathology at Oxford to help with work on new antibiotics and obtained a D.Phil. in 1951. He subsequently joined the external staff of the Medical Research Council and later became a university Senior Research Officer and a Fellow of St Cross College, Oxford.

The most important of Newton's contributions to scientific research concerned peptide or peptide-like antibiotics. He isolated the polypeptide bacitracin, which found some use in medicine, and was closely involved in the work which established its amino-acid sequence and showed that it contained a novel thiazoline ring. After research had begun in Oxford on the antibiotics produced by a species of *Cephalosporium*, he played an important part in work which led to the isolation of penicillin *N* and the determination of its structure. It was during this work that crude preparations of penicillin *N* were found to contain a new but related compound, cephalosporin *C*, which was resistant to staphylococcal penicillinase. Newton made important contributions to the determination of the structure of cephalosporin *C* and to experiments which showed that different cephalosporins could be obtained by replacing its acetoxy group with certain nucleophiles and by removing its D- α -aminoadipoyl side chain to yield 7-aminocephalosporanic acid. From the basis provided by this work pharmaceutical companies in the United States and Britain were able to produce cephalosporins of clinical value, and the National Research Development Corporation negotiated royalty agreements which have provided it with a considerable revenue. Newton was able to use a small part of this money to set up a trust fund for medical research. Guy Newton was an unselfish and completely unpretentious man of absolute integrity. His conscientiousness and meticulous attention to detail contributed in no small measure to his scientific achievements.

Correspondence

Misunderstood Profession

SIR,—As an ordinary member of the NUT who has taught in secondary modern and independent schools for some ten years, I find your editorial "Misunderstood Profession" (221, 304; 1969) not only untrue but objectionable in its incitement to strike action for improved pay.

In the opinion of many teachers, too much of the NUT's energy goes into problems of pay scales and too little into conditions of service for teachers and the interests of the pupils.

Someone who is not a member of the teaching profession said recently that teachers' pay is not unreasonable for the number of hours worked compared with industry. Although I would like to refute this statement on the grounds that long hours are spent in marking and preparation which makes up for the longer holidays, in my experience a very large proportion of teachers never prepare a lesson, seldom mark a book and generally stick rigidly to work in school hours only. To justify increased pay, the profession should put its own house in order in this respect and such obligations should be taught in the teacher training colleges.

If you are looking for a justifiable criticism of the NUT, it can be found in the way in which it virtually ignores the teacher/pupil ratio in primary and secondary schools and has supported the Government in its intention to raise the school leaving age, before it has provided an adequate number of teachers to cope with the existing school numbers.

In my experience, the NUT remark which you treat with a douche of cold water, that most teachers enter the profession for idealistic reasons, is undoubtedly true, but they very soon get their idealism knocked out of them when faced with six classes of forty or more children each day.

The matter of class size is one of the main justifications for the independent schools. Parents know that classes will be of a size which allows the teacher to teach and not spend the whole of his time just maintaining discipline. There are schools in many areas, particularly in London and the larger cities, where children can go right through school and come out virtually illiterate at the end; class size is almost the sole reason for this situation.

Yours faithfully,

MARY SCOTT

The Spindles,
Telham Lane,
Battle,
Sussex.

Brighter Statistics

SIR,—Your comments (*Nature*, 221, 504; 1969) on the University Grants Committee statistics on costs per student are, in one respect, misleading. You state that "some very small biological departments prove to be extremely expensive", and quote as one example that Sussex, with 32 undergraduates and 11 graduate students, costs £2,000 per head. It is possibly true that small departments are uneconomic, but it is wrong to quote Sussex to prove it.

The figures quoted are for our first year of opening, 1965-66, when there were only a small group of first-year undergraduates in the school. In 1967-68, there were 269 undergraduates and 66 postgraduate students in the school, and the cost per head was appreciably below the figure of £930 which was the national average in 1965-66 for biological sciences.

Yours faithfully,

J. MAYNARD SMITH

University of Sussex,
Biology Building,
Falmer, Brighton,
Sussex.

University News

Dr J. R. Dunning has resigned from his post as dean of the Columbia University School of Engineering and Applied Science and has become the first holder of the Thayer Lindsley professorship in applied science.

Dr J. Friend has been appointed to the chair of botany at the **University of Hull**.

Professor O. V. S. Heath is to retire from the chair of horticulture at the University of Reading; he will continue as director of the ARC Unit of Flower Crop Physiology.

Dr D. S. Dugdale has been appointed to a personal chair in the Department of Mechanical Engineering at the **University of Sheffield**.

Appointments

The **Earl of Bessborough** has been appointed the deputy chairman of the Metrication Board. The chairman is Lord Ritchie-Calder.

Dr H. M. Mark, chairman of the Department of Nuclear Engineering at the University of California, has been appointed director of NASA's Ames Research Center, California.