

a high status in society and public interest in his work, but has greatly encouraged the penetration of the scientific approach within engineering itself.

The Academy has been particularly fortunate in having at its head three outstanding men: Axel Enström, Edy Velander and now Sven Bröhult, very different personalities but each uniquely appropriate for the phase of development which he has led.

An important feature of IVA's activity is the annual commemoration meeting held each October on the anniversary of the granting of its charter. This is a splendid occasion, attended generally by the king and the élite of Sweden in addition to the members of the Academy, at which the director is bound by constitution to deliver a survey of the development of science and technology during the past year. This has provided a series of brilliantly staged demonstrations and lectures on new technological developments which have brought to the attention of the informed public many of the important applications of science, often long before their significance has been generally recognized.

This is not the place to describe the work of IVA in detail. But it should be mentioned that it consists of a maximum of 200 persons under 65 years of age. There are ten sections—mechanical, electrotechnical, building, chemical, mining and metallurgical science, computer engineering, basic science, forest and wood technology, economics and biotechnics. Each section is allotted a statutory number of seats. Once a member reaches the age of 65, his seat is no longer counted (although his membership continues) and a new member can be elected. This arrangement enables a steady rejuvenation of the body. Members are engineering scientists of prominence from industry, higher education and research institutes. IVA has done much to promote the establishment of new research institutes, particularly for borderline subjects, and is frequently called on to advise the government.

Far from exacerbating the difference between scientists and engineers which you fear, IVA has built a bridge between them and has the respect and support of the academic scientists.

Yours faithfully,

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Applying Research

SIR,—While one would agree that some of the points made by Professor Temperley (*Nature*, 214, 1378; 1967) are valid, I would like to take issue with one of them.

He says that he "once interviewed a distinguished PhD of several years' standing whose job was to devise schedules of cutting up steel rod and plate in order to fill orders with minimum wastage!". Professor Temperley hoped this was a very extreme case of inefficient use of scientists.

In fact this particular problem is very important. In the special case of minimizing waste in cutting orders out of steel plate it is mathematically intricate and poses great difficulties. This, however, is not the point at issue, which is the value of this sort of work to the steel industry.

At present about 4 per cent of steel production is waste, due, amongst other things, to the problem of cutting up orders out of batches of steel. This represents an annual loss of about £6m a year. Hence, although at first sight this seems a trivial problem, it is, on a national scale, most important, and any PhD scientist who could save a few per cent of this £6m would be making a sizable contribution to his employers' economic wellbeing. In addition, of course, general solutions to this problem could be applied not only throughout the steel industry but also to other industries, including glass and paper

manufacture where similar problems arise and where important economies remain to be effected.

Yours faithfully,

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Titles

SIR,—I have read the letter from Mr Eugene Munroe in *Nature* (214, 1064; 1967) concerning titles. I trust that you will not be swayed by his arguments.

Surely the function of the titles of articles in *Nature* about general scientific policy is that they should be "catch-reader". Far too few scientists, I fancy, concern themselves with such matters and anything which can trap them into broadening their outlook and thinking is to be welcomed. To set against this socially desirable end the convenience of people who want to have "a card file on scientific policy" is to be irresponsible to the scientific community as a whole.

Yours faithfully,

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Pharmacology

SIR,—A drug has been defined as "any chemical substance that, administered to a living organism (or its part), gives rise to a scientific paper". Although drugs may be administered for other purposes than scientific investigation, this purpose concerns us now.

Reading through the classified list of Letters to the Editor in this week's *Nature* (July 1, 1967), I notice six letters on the effects of drugs, but no heading of Pharmacology, which is the science of drugs. One of these letters is placed under Physiology ("Inhibition of Gastric Acid Secretion by a Purified Bacterial Lipopolysaccharide"). Two are under Pathology ("Effect of Cyclophosphamide, 6-Mercaptopurine or Methotrexate on the Furth Rat Leukaemia" and "Demonstration of Copper and Acid Phosphatase Activity in Hepatocyte Lysosomes in Experimental Copper Toxicity"). Another pharmacological letter is placed under Biochemistry ("Effect of Actinomycin on Protein Synthesis by Lymphocytes"). The fifth letter is under Microbiology ("Action of Ethidium Bromide on Growth of Herpes Virus in Cell Cultures") and the sixth under Biology ("Toxicity of Tobacco Smoke to the Spotted Alfalfa Aphid *Therioaphis maculata* (Buckton)").

Concerned as it is with the use of chemical substances to explore the nature of life, pharmacology is a meeting point of chemistry and biology and therefore a subject that is growing fast. To deny it a place among the headings of your letters distorts the picture of how work is distributed in the various fields of research. It also forces pharmacologists to search harder for what they ought to read. Does this forced searching not deny a simple extension of your own thesis that "the professional reader is the one most concerned to know precisely what claim on his attention an article sets out to make" (*Nature*, June 10, 1967, Vol. 214, p. 1078)?

The removal of the subject head Pharmacology from the classification of Letters to the Editor is not a pleasing change.

Yours faithfully,

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