to publish their results so as to have the greatest impact on scientists. No scientist need feel too experienced to derive benefit from it. Editors will read it with delight and wish to bring it to the attention of authors who submit badly written articles. If an author will follow the good advice given in the manual he will write a better article; he will also appreciably lighten the burden of the editors to whom the article is submitted.

Woodford is the chief contributor with his sections on "Writing a Journal Article" and "Design of Tables and Figures" which occupy 127 pages. These chapters provide everything an instructor needs. A most valuable feature is chapter seven on "Editorial Assignments". Here there are set out on facing pages faulty texts and improved texts. The faults are explained and the reasons for the improvements given in footnotes. In this way it is shown how the lessons of the previous chapters can be put into practice. The faulty texts are no exaggeration of what some authors have submitted to the editors of a journal. No one who studies the 44 pages of this chapter can fail to be impressed by the care and thought required in the writing of a good article.

Edwin L. Cooper's chapter on "Writing a Doctoral Thesis" pleads that theses should be written on the same principles as a journal article and "do not have to be thick to be scholarly". Woodford provides a useful chapter on "Writing a Research Project Proposal". Ellsworth B. Cook is rightly not "apologetic" about the inclusion of his chapter "Oral Presentation of a Scientific Paper" in a book about writing. If all speakers at a scientific congress followed Cook's advice it would add greatly to the pleasure of the audience. Another useful chapter is contributed by Marcus Rosenblum on "Principles and Practices in Searching Scientific Literature".

A good feature of this book is the extensive bibliography (given in several places) which includes valuable comments on the books and articles mentioned. It is pleasant for English readers to find that Quiller-Couch's "The Art of Writing" and Gowers's "The Complete Plain Words" are so highly recommended. There is an excellent index.

This is a most readable book which should be read by everyone concerned with the writing of a scientific article. No laboratory should be without it. W. V. THORPE

Correspondence

Who will Guard the Guardians ?

SIR,—Because the case of Dr Tarnesby (*Nature*, **223**, 434; 1969) may be the subject of an appeal to the Judicial Committee of the Privy Council it would be inappropriate for the Disciplinary Committee of the General Medical Council to comment in detail on the seriously misleading impression given in your editorial article, "Who will Guard the Guardians ?". Two important points, however, should be made.

First, the article is based on only one of the three principal matters alleged in the particulars of the charge, and even that is incorrectly summarized. It thus gives a wholly incomplete picture of the allegations and evidence which were the subject of the inquiry.

Second, before the committee proceeded to determine in camera which, if any, of the facts in the charge had been proved to their satisfaction, the following clear warning was given by the chairman, Lord Cohen of Birkenhead: "I think it proper, and in this the Legal Assessor concurs, that I should make clear in public that in their determination in this case the committee must not be influenced by any views they might hold on the rights or wrongs of abortion or on the working of the Abortion Act. They will confine their judgment to the facts alleged in the charge against the practitioner."

Yours faithfully,

W. K. PYKE-LEES

General Medical Council,
44 Hallam Street,
London W1N 6AE.

Moon Dust and Coal Ash

SIR,—We have been struck by the similarity between the preliminary descriptions of moon dust and that of the ash residue collected from pulverized coal-fired boilers (that is, pulverized fuel ash or pfa). Pfa is a fine powder, usually of a light grey or brown colour but sometimes much darker. It consists largely of tiny spheres of silicate glasses. So apparently does moon dust. With pfa the diameters of the spheres lie in the range 1 to 100 μm. The manner of their formation in the boiler flame has been studied recently by one of us[1]. The spheres are formed when the particles of mineral matter, which is ground small in the coal pulverizing mills, are fused in the coal flame.

The time required for the transformation from an angular rocky form to a nearly perfect sphere depends on the particle size and the surface tension and viscosity of the fused silicate at the appropriate temperature. In a pulverized fuel furnace the flame temperature does not usually exceed 1,800 K, but the time during which the small particles are exposed to this temperature, or to within a few hundred degrees of it, is long enough (a few seconds) to ensure that silicate particles of a wide range of composition except the larger particles of pure quartz — are converted to spheres

In addition to the solid microspheres formed in this way, pfa often contains a proportion of thin-walled hollow spheres with diameters in the range 20–200 μm. Fig. 1 shows a scanning electron micrograph of a small collection of these hollow spheres; the shell of one of them has been broken. Infrared analysis reveals that they contain trapped carbon dioxide with only traces of other gases. It appears[2] that pfa spheres are inflated by the relatively slow oxidation of carbides dissolved in the fused silicate. The carbide is apparently formed from carbon in contact with the outer surface of the fused silicate particle. There are other processes which could result in hollow spheres, but only that based on carbides seems to fit the tempera-

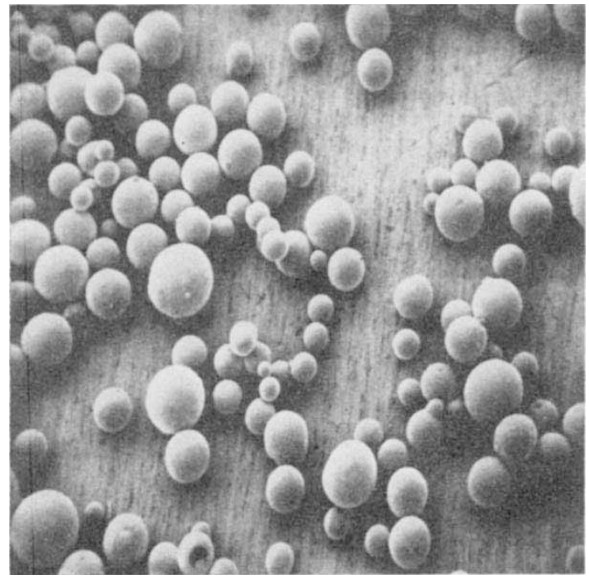

Fig. 1.