Publication Delay

SIR,—Delay in the publication of manuscripts in specialized scientific journals is becoming more and more frustrating because of the pace of science today. In many domestic journals it takes 6–9 months to publish a manuscript after receipt. In the case of European journals, it takes at least 2 more months because of postal handling of manuscripts and galley proofs; there can be even further delay if the manuscript has to be revised. In addition to this, journals can take about 2 months by surface mail to travel between Europe and the United States.

This means that 8–11 months may elapse before a submitted manuscript reaches the scientific community. This delay is frustrating for two reasons: (i) the work may be needlessly duplicated by the efforts of colleagues which might more profitably have been spent on the other aspects of the same problem; and (ii) the scientific and social impact of the information may be diminished.

Several solutions to this problem are available. (i) Journals could publish more manuscripts in each issue, change to a larger page size, or publish more frequent issues. Some periodicals have already adopted one or more of these solutions. (ii) Reviewing procedures could be made more efficient; more European journals could let their US editors review North American manuscripts and vice versa; (iii) mailings could be made by air; (iv) journals (which do not already do so) could make available a list of accepted manuscripts along with the authors' names, addresses, and expected dates of publication. This list could either be published by the journal itself or by some scientific abstracting or indexing service (for example, *Biological Abstracts, Chemical Abstracts, Current Contents*) and the pre-publication manuscripts could be obtained either directly from the authors or, at a reasonable cost, from the particular journal.

We are aware that each of these suggestions entails additional publication costs. However, we believe that the fourth suggestion should be considered because it could greatly diminish the communication delay with the minimal additional publication expense.

Yours faithfully,

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How to Succeed . . . ?

WE have received the following chain letter from an offended reader.

Dear Doctor,

Publish or perish? Today, more scientists than ever before are faced with this problem. This letter brings you the opportunity not only to publish but to appear as a co-author of many interesting and important articles bearing on research problems in a variety of scientific disciplines. Naturally, we want to help you, but in order to do this you have to help us.

Below are the names of eight well-known scientists. Include them as co-authors in your next publication.

Then make eight copies of this letter with the list of names amended as follows. Strike out the name of the first mentioned scientist and advance the positions of the remaining names by one place upwards. Then include your name at the bottom of the list.

Send the eight copies to eight well-known scientists of your acquaintance. Try to maintain as far as possible the high standard of scientific excellence represented on the present list.

If you send eight copies off within a few weeks and publish, as you usually do, within a few months, you should by the end of a year be the co-author of approximately 16,000,000 first-class papers. Not bad going—Eh!

Obituary

Dr H. Barrell

HARRY BARRELL, who died on February 16, 1972, was a former Superintendent of what was then the Standards Division of the National Physical Laboratory. His reputation was international and he was for many years one of the leading metrologists who brought about the replacement of mechanical standards of length and time by the present atomic standards, the wavelength of a line in the spectrum of krypton-86 and the caesium-133 atomic frequency standard.

Barrell, whose family came from Herefordshire, took his BSc degree at Imperial College and then worked for a time with R. H. Fowler, the spectroscopist. He was appointed to the staff of the Metrology Division in 1923 and between the wars worked with J. E. Sears on the measurement of the metre in terms of the wavelength of the cadmium red line, and on the refractive index and dispersion of air; the latter work is definitive.

The distance over which interference fringes can be obtained with the red line in the spectrum of cadmium is much less than 1 m and therefore, much as in the work of Fabry and Perot and others, Sears and Barrell used a system of fringes of interference in white light to relate a length of one ninth of a metre, directly measurable by interference in the cadmium red line, to a length of 1 m in two stages of comparison in white light. The experiments were characterized by imaginative design and careful execution, supported by the excellent facilities of the workshops of the National Physical Laboratory.

In the primary work, the length of a mechanical end standard about 1 m long was determined in a vacuum by an interferometer in terms of the cadmium line; at the time the result seemed discordant with that of parallel determinations in Germany but later studies of the properties of the light sources showed that the agreement was in fact very close. It was, however, clear that the discrepancies between these and other determinations of the metre arose mainly from the errors in making micrometer microscope settings upon the line standards of length by which the metre was then defined. Accordingly, when after 1945 single isotopes became available, it was decided that there was no point in making further comparisons with the mechanical standards but that, instead, the mean value of the metre in terms of the cadmium line should be accepted and should be converted to a value in terms of a single isotope line through purely interferometric comparisons of the wavelength of the latter with that of the cadmium line. Barrell was one of the first to study the radiation from single isotopes, making use of the refined interferometric techniques he had developed and, in particular, he made a careful study of the dependence of the wavelengths of lines in the spectrum of mercury-198 upon the conditions of excitation.

He was prominent in the international discussions that led to the adoption of the krypton-86 line and succeeded J. E. Sears as a member of the International Committee for Weights and Measures. Meanwhile Dr L. Essen was developing the caesium atomic beam standard of frequency, and Barrell, as a member of the International Committee and as President of its Advisory Committee on the Definition of the Second, had a decisive effect on the adoption of the present

definition of the second in terms of a hyperfine transition in caesium-133.

Barrell's work on atomic standards has been a major contribution to the transformation that methods and standards of measurement have undergone in the past 30 years, leading to much improved precision and accessibility of standards, with all that implies for reliability, convenience and economy in physics and engineering.

He himself made notable contributions to engineering applications, especially of interferometric methods for calibrating engineers' gauges.

As Superintendent of the Standards Division, Barrell brought together into an effective team many groups working on problems of measurement in the National Physical Laboratory and he particularly encouraged the first steps that were taken to relate electrical standards to measurement of frequency. He was an inspiring leader of his division and many important pieces of work depended greatly on his encouragement. The high regard in which the metrological work of the National Physical Laboratory is held internationally is the result of the foundations Barrell and his predecessors laid in their choice of programmes and people.

In his younger days Barrell was a keen member of the National Physical Laboratory hockey club, the standing of which has always been high; in later years he took up amateur acting and shone in character parts, for example in "The Crucible" and "The School for Scandal".

Distinguished scientist, international leader, inspiring Superintendent as he was, by most of those who knew him Barrell will be remembered for his encouragement and support but above all for his friendship.

Announcements

University News

Professor S. J. Prias, National Institute of Economic and Social Research, has been appointed visiting professor in econometrics in the Department of Social Science and Humanities, **The City University.**

Professor Phillip A. Griffiths has been appointed professor of mathematics in **Harvard University. Dr. George Brooks Field** has been appointed professor of astronomy at Harvard, and will succeed **Professor Alexander Dalgarno** as director of the Harvard College Observatory in 1973.

Dr A. C. T. North has been appointed professor of molecular biophysics in the Astbury Department of Biophysics, **University of Leeds.**

Professor E. A. Bell, University of Texas, has been appointed to the chair of biology tenable at King's College, **University of London.** The title of professor of zoology has been conferred on **Dr J. L. Cloudsley-Thompson,** in respect of his post at Birkbeck College, and that of professor of haematology on **Dr J. G. Humble,** in respect of his post at the Westminster Medical School.

Professor Colin Kaplan, head of the Microbiology Department, **University of Reading,** has been appointed dean of the Faculty of Science.

Dr J. D. Woods, Meteorological Office, Bracknell, has been appointed to the chair of physical oceanography at the **University of Southampton.**

Appointments

Professor J. Wreford Watson, University of Edinburgh, has been appointed a member of the **Social Science Research Council.**

Dr Eric J. Gibson has been appointed an assistant director of the Building Research Establishment and head of **Princes Risborough Laboratory.**

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therapy for reasons which are not clear at present. This group includes many patients with brain tumours, soft tissue sarcoma, adenocarcinoma of the stomach and intestine and some melanomas. Locally advanced carcinoma of the cervix and bladder are also rarely cured by existing methods, and the recurrence of these tumours after treatment presents an extremely difficult problem which is not amenable to further radiotherapy or chemotherapy. If the cause of failure lies in the unfavourable radiobiological properties of radiation with low LET, use of radiation of higher LET might make a significant difference and certain groups might show a dramatic response to the new form of treatment. It is clear, however, that the possible advantages of radiation with high LET are of a speculative kind, and in any individual case they may instead turn out to be disadvantages. The presence of hypoxic cells in many tumours is the only reason for which radiation with high LET is certain to be advantageous, and even this may be an illusion because fractionation of low LET therapy may of itself eliminate the resistant hypoxic component[16]. It is to be hoped that the trial of fast neutron therapy at present in progress at the Hammersmith Hospital[17] will in due course answer the question of whether radiation with high LET has any radiotherapeutic advantage.

It is important to notice, however, that the case for heavy ions and mesons does not rest solely on the high LET of the radiation in the region of the peak. The distribution with depth of biologically effective dose is so very much closer to the ideal than anything which can be achieved with X-rays or electrons that improved therapeutic results must follow from this alone. This will be most marked in the case of very deep-seated cancers such as those of the bladder and the uterus.

It has by now become clear to everyone in the field of cancer research that the idea of a single wonder drug—a "cure for cancer"—is a mirage. Progress in the control of this group of diseases has taken the form of many small steps, each giving improvement in one facet of the problem and all taken together representing an important advance. Introduction of radiotherapy with heavy ions or negative pions will be a substantial step on the road.

I thank many of my colleagues for advice about several aspects of this article.

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