of the nature of the experiment, the clinical and post mortem findings, and other pharmacological or toxicological information must inevitably direct his attention to relevant features which might otherwise be overlooked.

Once a preliminary survey of the slides from a safety-evaluation experiment has been made, there may be a case for the slides from selected tissues to be re-examined to confirm the presence of a qualitative change in response to treatment, or to measure an apparent quantitative difference between material from treated and control animals. This may be the point at which it would be prudent to ask the same, or a second, pathologist to examine slides "blind". Perhaps the suggestion that is in the wind concerns only such selective re-examination of material. But if primary "blind" examination is proposed, it might as well be done by a blind pathologist!

Yours faithfully,

F. J. C. Roe
R. L. Carter

Department of Experimental Pathology,
Chester Beatty Research Institute,
Institute of Cancer Research,
Fulham Road,
London SW3.

E. Cotchin

Department of Pathology,
Royal Veterinary College,
Royal College Street,
London NW1.

G. M. Bonser

Department of Experimental Pathology
and Cancer Research,
Annexe,
171 Woodhouse Lane,
Leeds LS2 3AR.

Understanding Media

Sir,—On February 15, 1969, *Nature* published a communication from Drs R. G. Edwards, B. D. Bavister and P. C. Steptoe entitled "Early Stages of Fertilization *in vitro* of Human Oocytes matured *in vitro*". To a biologist, the results seemed to be in the nature of a sound record of work in progress, more likely than not to be consistent with a true fertilization *in vitro*, and further communications were awaited with great interest. But there was at that time no evidence of the critical final stages of the fertilization process, and no development to the stage of an embryo. The results could not certainly be distinguished from those to be expected from abortive parthenogenesis, a phenomenon that bedevilled much earlier work on animals before fertilization *in vitro* was conclusively demonstrated in the rabbit by M. C. Chang and others. There was incontrovertible evidence of gross maldistribution of chromosomes in many eggs. All this was made explicit or given due reference in the paper itself.

Shortly after, if my sense of public opinion is correct, large numbers of people came to believe in some or all of the following propositions: (1) that an absolute, unequivocal proof of fertilization of the human egg *in vitro* was available; (2) that this was the first experiment on fertilization *in vitro* in man; (3) that human foetuses had for the first time been cultured *in vitro*; (4) that "life" had been "created".

Since the authors had claimed none of these things, and since all the propositions seemed at that time false, or, at best, arguable, it seems—unless my understanding of public opinion is at fault—that certain misconceptions had spread throughout the world on a large scale. Some still appear to be current. Embarrassment must certainly have been caused to the authors as well as to all others who share with them a regard for the good name of reproductive biology.

The public must necessarily derive its information on technical matters largely from the popular media of mass-communication. It might be opportune for formal enquiry to be instituted into the extent to which these media do actually succeed in giving the public a correct version of scientific material. It would be easy to blame the public itself for its misunderstandings—but perhaps it is the lines of communication that are at fault.

Yours faithfully,

R. A. Beatty

Department of Genetics,
University of Edinburgh,
Scotland.

Capacity for Misunderstanding

Sir,—An important question of terminology arises in the teaching of thermodynamics. In this subject the word "heat" means energy transmitted because of a temperature difference. It very often happens that this is confused with internal energy, as a result of which serious misunderstanding arises. A recent test showed that not one of 148 university entrants in science and engineering knew the scientific meaning of heat. Consequently the first law of thermodynamics and even such an elementary concept as an adiabatic process must be meaningless to them. A contributory factor in this widespread misunderstanding may well be the use of the misleading term "heat capacity". The word capacity conveys the idea of containment, hence this term falsely suggests the containment of heat in matter. Unfortunately the equally misleading term "specific heat capacity" is coming into use.

I suggest that there would be a great educational advantage in discontinuing the use of the word "capacity" in this connexion. It would be better to use some such word as "acceptance". The "heat acceptance" of a body would mean the heat added divided by the consequent temperature rise. Heat is usually partly converted into internal energy in the body and partly into some other form of energy by means of external work. The word acceptance avoids the false implication that heat as such is contained in the body.

Yours faithfully,

J. W. Warren

Department of Physics,
Brunel University,
London W3.

Appointments

V. A. Kotel'nikov, Institute of Radio Engineering and Electronics, Moscow, has been elected to the position of vice-president of the **Academy of Sciences of the USSR.**

Dr Mahlon B. Hoagland, Dartmouth Medical School, has been appointed director of the **Worcester Foundation for Experimental Biology.**

The Secretary of State for Education and Science, **Mr Edward Short,** has appointed four new members of the **Council for Scientific Policy:** Professor G. S. Brindley, London Institute of Psychiatry; Professor A. H. Bunting, University of Reading; Dr H. Morrogh, British Cast Iron Research Association; Dr R. G. West, University of Cambridge.

Announcements

The Grand Prix Technique de la Ville de Paris has been awarded to **Professor Max Serruys.**

Dr Richard D. Deslattes has received an **Arthur S. Flemming award,** for his direction of research which led to the successful design, construction and demonstration of the first device combining an X-ray and optical interferometer.