

Who Wants to be a Scientist ?

SIR,—I was shocked to read (*Nature*, 220, 424; 1968) that "Girls feel that science and mathematics are boys' subjects . . . it is more important to girls to be considered attractive than brilliant . . . Girls are also deterred because they feel that science and marriage do not mix; once they have spent a few years producing a family their knowledge is out of date".

These statements are, of course, true—the shock came from the complacent acceptance of the inevitability of this odd point of view. That attitude is a major cause for shortages of scientists, physicians, surgeons and engineers in the western world. We are disqualifying 50 per cent of the population.

So far as I am aware, there is no evidence that the possession of ovaries qualifies or disqualifies a person for any particular mental activity—it merely reduces capacity for hard physical labour. The necessity for the latter qualification is rapidly decreasing in almost all fields of endeavour covered by higher forms of education.

One of the main reasons for the attitude of girls towards science is that they are trained from an early age by their mothers to regard sex-directed activities as a number one priority. Mothers display acute anxiety if their daughters are not interested in boy-friends and this pressure is developing at earlier and earlier ages. Few girls resist the drive to make them believe that their prime object in life is to get a man and produce a family. Men, too, want to have a wife and family, but they are not driven by society to regard this as their fundamental aim.

Yours faithfully,

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Risk of an Astrodemic

SIR,—The risk that astronauts returning from other celestial bodies might contaminate Earth with alien micro-organisms producing an astrodemic has not been adequately explored. Since the search for extraterrestrial life is given as a major purpose of space exploration, the chances that such life exists cannot be dismissed as negligible.

The announced precautions designed to prevent terrestrial contamination are inadequate in two respects. First, a crash on return, such as the one that killed the Russian astronaut Komarov, could negate all isolation and quarantine plans and liberate alien micro-organisms or spores on Earth. Second, even if there were no crash, the planned isolation and quarantine period of 3 weeks is quite insufficient. We know that several serious infectious diseases on Earth may have incubation periods well over 3 weeks. Examples are tuberculosis, syphilis, rabies, leprosy, lymphogranuloma venereum, kala-azar, sporotrichosis and kuru. In most cases, the agents of these diseases cannot be reliably cultured in three weeks: some cannot be cultured at all. Surely a quarantine insufficient for so many serious terrestrial diseases could hardly be considered adequate protection against unknown alien life forms.

Some scientists associated with space programmes play down risks from alien micro-organisms by referring to specificity of host requirements on the part of pathogens, but such specificity is not universal. Diseases like typhus fever and bubonic plague kill hosts of different phyla. There are even micro-organisms pathogenic for man and plants, including *Sporotrichia*, *Cryptostroma corticale* and *Sclerotinia sclerotiorum*. Also there are diseases referred to as "biological accidents" in which a product of a saprophyte or pathogen living on one form of life injures or kills a different life form ingesting it. Examples are botulism, ergotism and alimentary toxic aleukia. Host specificity

based on long periods of evolution is not essential to disease production. Finally, there are the indirect hazards of contaminating Earth, those to domestic animals and plants.

Because all people will suffer if an astrodemic occurs, elementary fairness requires a broadening of the debate over Earth safety. The decision about the risk to Earth of any round trip ought not to be left to a space agency, to committees appointed by it, or to related government agencies. A judgment upon which the future of all life on Earth may depend should be made openly, after careful debate and consideration, by representatives of all peoples.

Yours faithfully,

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University News

Dr G. R. Kelman has been appointed to the newly created chair of human physiology in the **University of Aberdeen**.

Dr G. A. Gilbert has been appointed to the newly designated chair of biochemistry in the Department of Chemistry, and **Dr D. G. Harnden**, MRC Clinical and Population Cytogenetics Research Unit, Edinburgh, has been appointed to the newly established chair of cancer studies in the Department of Pathology, in the **University of Birmingham**.

Dr H. Fernandez-Moran has been appointed A. N. Pritzker professor of biophysics in the Division of the Biological Sciences and the Pritzker School of Medicine of the **University of Chicago**.

Dr R. Gordon Hemingway has been appointed to the chair of animal husbandry in the **University of Glasgow**.

Professor J. R. Pappenheimer has been appointed George Higginson professor of physiology and **Professor Todd Frazier** has been appointed associate professor of biostatistics in the Faculty of Public Health and assistant director of the Center for Community Health and Medical Care at **Harvard University**.

The following appointments have been made in the **University of London**: **Dr M. R. C. McDowell**, Durham, to the chair of applied mathematics tenable at **Royal Holloway College**; **Dr R. F. Streater**, **Imperial College**, to the chair of applied mathematics at **Bedford College**; **Professor J. H. Wilkinson**, Pennsylvania, to the chair of chemical pathology at **Charing Cross Hospital School of Medicine**.

Appointments

Mr M. W. Hill has been appointed keeper of the **National Reference Library of Science and Invention**, a part of the British Museum.

Dr A. Rowzee, Polymer Corporation, Sarnia, Canada, has been appointed president of the **Society of Chemical Industry** in succession to Mr N. Iliff.

ERRATUM. In the communication "Cardiovascular Changes during Preparation for Fighting Behaviour in the Cat" by David B. Adams *et al.* (*Nature*, 220, 1339; 1968), the fourth sentence of the second paragraph on page 1240 should read "If sympathetic dilatation of muscle vessels ever occurs during preparation for fighting, it must be completely concealed by an overwhelming vasoconstrictive influence".