

CORRESPONDENCE

Access to journals

SIR — Your recent offer allowing scientists outside Poland to purchase, on behalf of a Polish colleague, a subscription to *Nature* at a reduced rate (*Nature* in Poland, 3 June p.354) is of commendable generosity. Respecting your desire to help Polish science we should like, nevertheless, to point out that the reported current deprivations suffered by Polish researchers are but a permanent and frustrating way of life for thousands of scientists throughout the developing world, for whom access to *Nature* and other scientific journals is invariably uncertain. The fact that their difficulties lack the publicized polemic attendant upon the current situation in Poland should in no way diminish our interest in their considerable scientific needs.

Nature clearly has a role to play as a detached observer of the repercussions felt in scientific circles consequent upon more general political events. We feel, however, that the selective character of your gesture, although consonant with the unabashed, and at times highly coloured, editorial commentaries in your columns, might compromise the impartiality to which you presumably aspire.

We urge you therefore to extend your offer to all those countries of the developing world where scarcity of hard currency hinders the purchase of individual, and indeed general, subscriptions to *Nature*, thereby affirming your commitment to the dispassion so precious in a serious scientific journal.

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THE circumstances that have recently arisen in Poland are special and, it is hoped, may be temporary and justify the special arrangements made — Editor, *Nature*.

Alternative to war

SIR — The pages of *Nature* continue to describe the arms race, yet no one writes of positive alternatives. The people, American or internationally, feel futile and sense issues are beyond their own influence. Point and counter-point by their leadership go on without the average family understanding the increments of escalation, yet reading that 100 million of "them" could die on the first day of nuclear bomb exchange.

The dilemma which feeds the arms race is that no dependable defence against nuclear weapons except more nuclear weapons has been conceived. Perhaps though, the annals of history may have modern application.

For thousands of years, kings, sultans, emperors, khans, used marriage as a form of national security; opposing tribes, federations, nations, reasoned that no one has more precious treasure than a daughter, and placing daughters by formal marriage, one or more brides in the capitol of the opposition, was equally a means of communication and a surety bond. Diplomacy through romance was an effective, inexpensive form of defence.

Why not a modern application of this idea? Why not neutralize nuclear attack not by stockpiling "over-kill", but by an exchange of the two nations' best young women and men, not through arranged marriages, although that may well be a "fall-out" from this kind of defence weapon. Why not negotiate an International Peace Army, equal numbers of Russians and Americans, equal numbers of women and men, all with or getting a college education, all single, all selected by national lottery, all between 20 and 25, all required to live one year in the other's country? Why not 250,000, in distinctive, attractive uniforms, in each country's universities from September to June each academic year, and then a three-month tour of each other's country?

Why not require that among these exchanged scholars be a defined percentage of the children or grandchildren of each nation's generals, congressmen, senators, central committee, political bureau, and cabinet?

This plan offers all merits and no liabilities. Both countries have good university systems, and an accredited year of university education and experience in a major foreign country, with full financial support, with such peace army service in lieu of traditional military draft, would not be an unreasonable sacrifice for a nation's youth. The assurance that another man will not harm his children and grandchildren is almost as basic a human value as can be defined. Such treasure placed in each country would give nuclear weapon reduction a new logic.

Among the assurances needed from members of an international peace army is that all must return to their home country. Some latitude for the success of propinquity, with consequent love, marriage and eventually children, will need to be anticipated. The most dedicated nuclear-response senator or central committee member may be softened by the presence of a son, daughter-in-law, and grandchildren living at ground-zero, abroad.

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Nuclear risks

SIR — I really cannot leave the statements made by Robert Yaes (*Nature* 24 June, p.622) unchallenged. He comments that "It is naive to compare this [the many thousands of people killed by dam failures] to the record of the nuclear power industry". It might be "naive" if the comparisons were unsupported by a thorough analysis of nuclear risks, but that is not so. The searching nuclear risk assessments of the past decade justify regarding the nuclear safety record, which is second to none, as the proof of the pudding, not just a fluke. Even Dr Yaes's so-called "near misses", including Three Mile Island, serve to demonstrate the adequacy of the meticulous precautions taken in reactor design, and to vindicate the essential soundness of the defence in depth strategy adopted.

For many current industrial and commercial activities, including generating electricity from nuclear power, it is just conceivable, so long as one assumes a total failure of highly reliable safety devices coinciding with extremely improbable external conditions, that an accident could cause a large number of deaths.

However, I know of no single nuclear reactor accident thought remotely capable of killing "several million people" as Dr Yaes so irresponsibly suggests.

As Sir Walter Marshall indicated in his recent lecture to the Royal Society (29 June), headlines such as "Reactor incident could kill 10,000 people in London" are completely misleading. "Could" in this instance means that such an accident is imaginable as a very remote possibility. It does not mean that such accidents are a "real" possibility (in the sense that two jumbo jets colliding is a "real" possibility). Furthermore the word "kill" is not to be interpreted as the sudden and immediate deaths resulting from dam disasters or earthquakes. Rather it must be viewed as an "adverse health effect" on a par with that due to cigarette smoking. Given that it did in fact occur, it can be equated to requiring the exposed population to smoke 1/20th of a cigarette each week over the period 10 to 40 years after the accident — hardly the picture Dr Yaes's letter conveys. G.H. KINCHING
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Be fair to parasites

SIR — In a recent letter (*Nature* 4 March, p.10), Professor F.E.G. Cox states that "infections with parasites are characteristically long and chronic and the resulting diseases involve diverse pathological mechanisms. The damage caused is vastly in excess of the expected local reactions to the parasites themselves and appears out of all proportion to their size." I find this generalization to be both lacking in breadth of meaning and inaccurate in content.

The original meaning of parasite stems from the Greek *parasitos*, which means one who eats at another's table. Like a capricious bandit who has forced his way in, the parasite now obligates the host to prepare a banquet for him. This statement is made without reference to pathogenicity and diseases caused by parasites are usually a function of parasite density and the pathological state or health of the host. From the standpoint of its survival and species perpetuation, it would be deleterious to the parasite to cause the death of the host. The adverse cellular reactions which can accompany parasitism usually suggest a comparatively recent relationship in evolutionary time.

Some parasites may even be of benefit. The host may gain from the exchange of chemical substances with the parasite, or a species of nonpathogenic parasite may protect the host from infection by another, perhaps more injurious, species. It is estimated that *Entamoeba histolytica* is found in faeces of over 400 million people throughout the world, but most of the time these organisms lead a nonpathogenic existence in the intestine. Only when certain physiologic changes take place in the host does *E. histolytica* become pathogenic.

Relationships between parasites and hosts are complex, and their associations are as varied and unique as the individual components that make up each system.

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