exposures to it may be allowed while exposures of other organs may be being ignored — the exact opposite of the intention of the weighting scheme. Similar arguments have been raised in the Swedish National Institute for Radiation Protection.

Robert Walgate

Cosmonauts

More and merrier

ON 26 MAY, Bertalan Farkas of Hungary became the fifth non-Soviet citizen to go into orbit aboard a *Soyuz* spacecraft. With more than half the Comecon allies now accounted for, Soviet space planners are stressing that hospitality aboard their space-stations is theoretically open to countries outside the Socialist bloc. France and India are already on the waiting list. The possibility of wider participation in the Soviet space programme was advertised last February at the Hamburg Scientific Forum by Academician Nikolai Blokhin.

For the Comecon guests aboard the *Soyuz* and *Salyut* spacecraft, a certain pattern of experimental work has emerged. As well as taking part in routine biomedical and astrophysical observations, the participating country also contributes a set of experiments reflecting its own particular interests. It further contributes a crystallography experiment, in which a hermetically sealed ampoule containing a mixture of compounds that will not normally crystallize homogeneously under gravity is treated in a furnace aboard the *Salyut* station in the hope of producing new semi-conductor substances. Traditionally the experiment is given a name symbolizing the national traditions of the country concerned. For Hungary, the name chosen was *Otvos* (Goldsmith), referring to an ancient Hungarian craft, and also a tribute to Lorand Eotvos (the pronunciation is the same), the nineteenth century Hungarian physicist.

More specifically Hungarian in origin are the termoluminescent dosimetry experiments *Integral* and *Pille* (Moth). The Central Research Institute for Physics of the Hungarian Academy of Sciences has been interested in the termoluminescent monitoring of ionizing radiations for more than 15 years, and since 1970 has contributed dosimetry instruments to the *Interkosmos* programme.

The *Integral* test measures accumulated radiation at various points of the spacecraft over several months. The first test run was inaugurated aboard *Salyut-6* in 1979, and a second set of monitors (crystalline samples of $\text{CaSO}_4:\text{Dy}$ and $\text{BaSO}_4:\text{Tm}$) have now been installed. *Pille*, a miniaturized instrument by Comecon standards (1 litre volume, 1 kg mass, and with a dosage range from 10 mrad to 10 rad), is a short-term monitoring device, giving readings of accumulated dose every 2-3 days. The same type of dosimeters will ultimately be used for monitoring the personnel of the Paks nuclear power

Farkas — looking alike

station, now under construction in Hungary.

Photography and telemetry of the participating country is also now a traditional part of joint flights. For Hungary, this has meant geodesic surveying (to check existing maps and optimize land use), photographing the whole of the Hungarian section of the Danube (preparatory to monitoring environmental changes expected after construction of the hydroelectric plant at Nagymanos and the nuclear power station at Paks) and the observation of eutrophication and pollution of Lake Balaton and its tributaries.

Farkas was given charge of a series of experiments intended to throw light on the production of interferon by leucocyte cultures, but more practical considerations have not been neglected. Apparently sceptical of claims in 1978 by the Soviet-Polish mission that cosmonauts lose their sense of taste, Farkas was provided with special picnic packs by the Quartermasters' Division of the Hungarian People's Army and the Research Institute of the Cannery and Paprika Processing industry. The packs included goose-liver pate, pork-paprikas, bean salad with sausage and chicken in aspic, and were designed so that Farkas could share them with his hosts.

Vera Rich

UN assistance

No rows yet

Washington

As UN events go, last week's meeting in New York of the new Inter-Governmental Committee on Science and Technology for Development was a relatively tame affair. There were no late-night sessions, and little of the international tension that pervaded last year's UN conference on the same theme in Vienna.

But if the outcome of the meeting can be weighed more easily in terms of bureaucratic prose than in targeted research

dollars, many third world delegates returned home confident that they had helped to steer the scientific activities of the UN system closer to their self-perceived needs.

Set up by the UN General Assembly on the recommendation of the Vienna conference, the IGC provides a forum on science policy matters for all member states of the UN — and is thus an implicit move to shift the control of such matters away from groups more heavily dominated by the developed countries (as the now-defunct Office of Science and Technology was perceived to be).

The committee has been created by another new creation, the Centre for Science and Technology for Development. Two days before the New York meeting, the director of the centre — who has the rank of assistant secretary-general — was named as Dr Amílcar Figueira Ferari, an engineer who was director of Brazil's National Research Council and a member of that country's delegation to UNCSTD.

Some of the developed countries made little secret of their frustration with the meeting's emphasis on administrative matters, urging that work should start on specific projects. The Canadian delegation, for example, put in a strong bid for the setting up of an international scientific and technological information system and were disappointed when the IGC decided that organisational and institutional arrangements should take precedence.

Most delegates from the developing countries, however, expressed the view that the coordination and control of research efforts within the UN system — as well as efforts to stimulate national and regional research programmes — may prove of more long-term significance than attempts to raise additional research funds from the industrialised nations, particularly at a time of general financial stringency.

The New York meeting faced three particular issues: how to set in motion the main recommendations of the Vienna conference; how to define the role of the Centre for Science and Technology with respect to the Interim Fund for Third World Science established and administered by the United Nations Development Programme; and how to approach the thorny question of 'harmonising' the scientific and technological efforts of the specialised UN agencies.

On the first issue, there was little contention. A new Scientific Advisory Committee will be set up, a successor to the Advisory Committee on the Application of Science and Technology to Development (ACAST) serviced by OST. And member countries of a 27-member group of experts were named to report on the long-term prospects for a new science and technology financing system within the UN.

On the second issue, there was a rerun of debates in Vienna, with some Third World delegates demanding greater control by the new centre over the UNDP Fund — for

which \$36 million in contributions and another \$10 million in commitments was raised two months ago — while the developed countries and UNDP officials sought maximum flexibility.

In the end, a compromise was reached under which the centre will be given a role in 'reviewing' the operation of the Interim Fund. In addition new guidelines for the fund were agreed; some delegates, for example, were critical of the fact that a

large proportion of the 350 funding proposals received had originated from within UN agencies, and stipulated that all proposals for funding should come through governments. But the IGC's role remains one of direction-setting and overview rather than direct involvement.

Coordinating the scientific and technological activities of the 'organs and organisations' within the UN system will prove the hardest nut to crack. Most of the

specialised agencies, such as the United Nations Educational Scientific and Cultural Organisation, are fiercely protective of their independence, resisting any effort to subsume this independence under any centralised mechanism.

But third world delegates on the IGC remain adamant that increased co-ordination between the agencies is essential if the broad goals of the Vienna conference are to be met.

David Dickson

CORRESPONDENCE

Split syntax

SIR,—While Dr Glascock is to be congratulated on his ingeniously contrived verse on syntax (8 May, p.66), he should have been more careful in the way he worded his introductory paragraph. As the Hungarians say, "Bagoly mondja verébnek hogy nagyfejű".*

I therefore offer the following supplementary stanza:

You are right Doctor Glascock to chide as you do
The scientist for what he has writ
But one rule of syntax eludes even you:
Infinitives should never be split!

Yours faithfully,

G A GARTON

(With but scant acknowledgements to Fowler)
Aberdeen, UK

*"The owl calls the sparrow a bighead."

depth of nearer 30,000 than 10,000 feet, making 393 million cubic miles of water a mere puddle by comparison.

Is it possible that Mr Jukes, despite his air of wry scepticism, is really an apologist for scientific creationism or, perhaps, even a member of the Creation Research Society? If so, he will know how to handle the problems he raises such as the waste "disposal problem" on the ark, the "botanical problem" after the deluge, the "bacteria and protozoa" collection problem and the water dispersal problem. It is on this very point that modern profane science founders, utterly incapable, it would seem, of relying on the miraculous to solve thorny problems, theoretical or otherwise. Creation science, on the contrary, knows no such incapacity but invokes the miraculous at will, often and gladly.

Yours faithfully,

DELOS B. MCKOWN

Department of Philosophy
Auburn University, Ala., USA

great changes in the elevations and depressions of the land and seas have occurred is clear from, for instance, the burial of coal measures below thousands of feet of sedimentary rocks and the existence of submarine canyons. Radical change after the flood is suggested by another scriptural reference *Peter*, 2; 5 and 6.

It has been suggested that the statement made in *Genesis* I; 6 about waters above the firmament indicates that there was above the earth a canopy of water vapour which was precipitated during the flood. This would account for a change in salinity of the oceans which in a recent article in *Nature* was mentioned as a possible cause of the dying out of the dinosaurs

Yours faithfully,

D. CONWAY

Weymouth,
Dorset, UK

No room in the ark

SIR,—Impetuosity in science is surely to be avoided in favour of caution even as exaggeration is to be eschewed in favour of understatement, but do these wise maxims excuse Mr Thomas H. Jukes for his unconscionable conservatism in his short piece "Two By Two" (*Nature* 15 May).

Commenting on the Noachian flood, Mr Jukes opines that Noah's ark would have provided less than one cubic metre, on the average, for each pair of vertebrates plus their food, a sufficient supply of which was needed to last for about a year. But why, we may wonder, did he undertake his calculations on the basis of *Genesis* 6; 19 in which Noah is directed to take aboard the ark a male and female pair of every living thing rather than *Genesis* 7; 2-3 wherein Noah is directed to take aboard seven pairs of all clean beasts and fowls of the air in addition to one pair of unclean beasts, fowls and creeping things plus food for all?

Mr Jukes would do well to read the eleventh chapter of *Leviticus* (in which clean beasts, fowls and creeping things are distinguished from unclean ones) before recommencing his calculations. Whatever the results of that unenviable task may be, one cubic metre per pair of vertebrates will be excessively capacious.

Even less excusable is his calculation that 393 million cubic miles of water resulted from the flood, a figure at which he arrived on the entirely arbitrary depth of 10,000 feet. Nor was there the slightest reason for him to compare that admittedly conservative figure with 17,000 feet, the approximate elevation of Mt Ararat. *Genesis* 6; 19-20 asserts that the waters rose fifteen cubits (about twenty-two feet) above all the high hills and the mountains of the earth. That would mean that even Everest was submerged and would involve a

SIR,—In Mr Jukes's article entitled "Two by Two" (*Nature*, 15 May) his most plausible argument against the biblical account of the Flood appears to lie in his last paragraph. His listing of amphibians, bacteria and protozoa as having to be gathered into the ark is open to question, and he has not mentioned the possibility that all the animals there might have been young and not mature specimens.

But his calculation of the rainfall needed to produce a universal flood, and the means of ultimate disposal of the water being held up to doubt, appear impressive only until one sees that he has overlooked the first cause of the flood. *Genesis* 7; 11 states: "The same day were all the fountains of the great deep broken up, and the windows of heaven were opened." Rain supplied only part of the flood water.

Second, Mr Jukes appears to assume that the relative heights and depths of the earth's surface before the flood were as they are now, an assumption which is in no way logical. That

Cheaper in paper

SIR,—From the Spring Book issue of *Nature* (24 April) I have taken at random the prices of a dozen books issued in both forms. The ratio (paperback price)/(hardback price) ranges from 0.352 to 0.607 and the average for the dozen books is 0.439. From the list of books, it can be seen that the books are not confined to books on any one subject or to books only of broad popular interest.

The books I have considered are scientific and technological. Whether there are similar difference for books in the areas of the arts and humanities, I do not know. I hope that publishers of scientific books will make paperbacks more widely available, thereby increasing sales and perhaps even profits as well.

Yours faithfully,

G. W. BRINDLEY

Pennsylvania State University
University Park,
Penn., USA

	Prices		Ratio
	Hard cover	Paperback	
Science and technology (Freeman)	£ 8.90	£ 5.40	0.607
Early diagenesis (Princeton)	£13.70	£ 5.25	0.383
Evolution of the igneous rocks (Princeton)	£19.30	£ 8.40	0.435
Evolution of North America (Princeton)	£15.20	£ 5.35	0.352
Knowledge and wonder (M.I.T.)	\$15.00	\$ 5.90	0.393
Mesozoic mammals (U. California)	\$21.00	\$ 5.75	0.274
Peano (Reidel)	\$34.00	\$14.95	0.440
Nuclear power and public policy (Reidel)	\$19.95	\$10.50	0.526
Serengeti lion (1972) (U. Chicago)	£12.25	£ 5.60	0.453
Condensed matter physics (Addison-Wesley)	\$26.50	\$14.50	0.547
Practical methods in electron microscopy (Elsevier)	\$73.25	\$27.50	0.375
Coulson's valence (Oxford)	£17.50	£ 8.50	0.485
	Average ratio		0.439