

## Niagara Falls

SIR,—*Niagara: Falling Falls* (*Nature*, 227, 11; 1970) is incomplete in its description of the erosion of the Rochester shale. Wind, spray and ice do indeed erode the visible shale cliff under the falls. However, the cliff is maintained by abrasion of the shale in the plunge pool. The large blocks which fall from the face of the dolomite are caught in the pool and rotated by the vorticity of the tailwater. This undercuts the shale cliff. This process is still active in the Horseshoe or Canadian Falls, which is retreating upstream rapidly, leaving the American Falls as a talus pile almost indistinguishable from the rest of the walls of the gorge.

Yours faithfully,

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## Bode's Law

SIR,—J. G. Hills's letter (*Nature*, 225, 840; 1970) states

that the semi-major axis  $r_i$  of the  $i$ th planet from the Sun is given by Bode's law

$$r_i = r_1 a^{(i-1)}$$

where  $a$  is a constant and the law "is obeyed by the inner satellites of Jupiter, Saturn and Uranus as well as the planets".

Apart from the fact the above formula does not appear in the cited reference<sup>1</sup> for the Earth, identified by  $i=3$ , we would have in astronomical units

$$r_3 = r_1 a^2 = 1$$

and the given formula reduces to

$$r_i = a^{i-3}$$

This expression for Bode's law in terms of one parameter is obviously oversimplified. For a one-to-one correspondence at Earth and Saturn,  $a=1.78$  and the errors in the predicted distances of Mercury and Venus are approximately 20 per cent. This is hardly a law "obeyed" by the planets.

Yours faithfully,

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# Obituaries

## Professor W. R. Jones

W. R. JONES, emeritus professor of mining geology at the University of London, died on June 9, 1970, at the age of 90. Trained in geology at Imperial College, London, he worked there as a demonstrator for two years before joining the Geological Survey of the Federated Malay States in 1912. His first substantial research dealt with the genesis of the secondary stanniferous deposits of the Kinta Valley in Perak, previously regarded as having been transported by ice from an ancient tinfield far to the west. Jones demonstrated convincingly that these deposits are really alluvial or residual in origin, their cassiterite being derived from the breakdown of stanniferous veins and disseminations in the nearby granites, limestones and schists. His intimate knowledge and experience of the tin and tungsten deposits of Burma and Malaya subsequently provided the basis for an assessment of the economic significance of their relative temperatures of formation, and also led him to predict that in many districts the lodes persist to much greater depths than was expected at the time.

Almost immediately after rejoining the staff of Imperial College in 1926, Jones pioneered in Britain the first systematic research and instruction in ore microscopy, and quickly aroused interest in its practical application, particularly in the field of mineral technology. In the

early 1930s he became concerned with the causes of silicosis among miners in the coalfield of his native South Wales, and by petrological examination of the dust collected from the silicotic lungs of deceased colliers, and of goldminers on the Witwatersrand of South Africa, he discovered that most of the particles consisted of minute fibres of the micaceous mineral, sericite. He concluded that silicosis was caused chiefly by the inhalation of fibrous silicate minerals released into the atmosphere during rock drilling and blasting, not by the intake of free silica in the form of quartz as was previously supposed. Although his contention met with some opposition, it gave fresh impetus to research on the incidence and prevention of silicosis, and fortunately soon led to the amelioration of statutes governing compensation for industrial lung diseases.

By his investigations into the lead-zinc mineral resources of Great Britain and his ardent advocacy of the nationalization of mineral rights he strove to revive metalliferous mining in that country. Many distinctions were conferred on him, including the CBE in 1948 for his chairmanship of a committee set up by the government to promote the rehabilitation of the china clay industry in Cornwall and Devon, the presidency of the Institution of Mining and Metallurgy in 1947-48 and its premier honour, the Gold Medal, in 1955 in recognition of his services to economic geology and the institution.

# Announcements

## University News

Dr John F. Mullan has been appointed acting chairman of the Department of Surgery in the Division of Biological Science and the Pritzker School of Medicine, University of Chicago.

The following curators in Harvard's Museum of Comparative Zoology have been appointed professors of biology: K. J. Boss, curator in malacology (molluscs);

H. W. Levi, curator in arachnology (spiders); and E. E. Williams, curator of reptiles and amphibians.

Dr N. A. Mitchison, National Institute for Medical Research, has been appointed to the Jodrell chair of zoology and comparative anatomy at University College, London; Professor M. H. F. Wilkins, King's College, has been appointed to the chair of biophysics tenable at that College.