It is additionally interesting to observe that the volume of an 'ounce molecular weight' of gas under N.T.P. conditions may conveniently be visualized, within an accuracy of one half per cent, as the volume of a carpet of gas 15 feet square and one tenth of a foot thick: the weight of this quantity of oxygen is two pounds.

H. D. H. DRANE.

4, Brooklands House,
Brooklands Park,
London, S.E.3.
March 30.

Salaries in Soviet Universities

IN estimating the income and standard of life of Russian professors, Dr. L. H. Callendar, in *NATURE* of February 12, has been influenced by the two misconceptions most frequently held by foreign visitors to the U.S.S.R. One is an undue pessimism in gauging the true value of the rouble, due to the fact that a foreigner always comes up against the most expensive items in the Soviet citizen's budget; and the other is the fact that if a professor earns 1,200 roubles a month, his wife will most certainly be earning at least half that sum. As I have just returned from more than five years' residence in the U.S.S.R., I can guarantee the authenticity of the following figures, which enable a comparison to be made of the standards of life in the two countries. The distribution of items is, of course, more or less arbitrary.

The average income of a Soviet professor is greater than Dr. Callendar states. Those whom I knew were all earning at least 1,500 roubles a month, but I shall assume an income of 1,200 roubles and a wife's income of 600 roubles, and shall compare the expenditure of a Russian family, consisting of husband, wife and two children, earning 1,800 roubles a month with that of an English professor's family with a salary of £100 a month or £1,200 a year. The official equivalent of 1,800 roubles is £70. To facilitate the comparison, I assume that both families live in flats.

U.S.S.R. (Kharkov, Ukraine)	per month roubles	England (London)	per month £	per ann. £
rent and services ..	120	rent and rates ..	15	180
(3-room flat with bath, kitchen and telephone)		(5-room flat with bath and kitchen)		
central heating ..	20	coal, light, telephone ..	4	48
(yearly average)		income tax ..	12	144
taxes and health insurance	50	life insurance ..	5	60
4 per cent. State loan ..	150	(5 per cent of income)		
clothing ..	250	clothing ..	8	96
laundry ..	50	laundry ..	1	12
food and household ..	700	food and household ..	24	288
cigarettes ..	100	tobacco and cigarettes ..	2	24
1 servant ..	60	2 servants ..	8	96
sundries ..	300	education ..	7	84
	1,800	doctor and dentist ..	2	24
		sundries (car, etc.) ..	12	144
			£100	£1200

Education and medical service are free to all in the U.S.S.R. The clinics are served by the best specialists, and I have not found them overcrowded; for example, I have never had to wait more than 15 minutes at the dentist's, even if I came without an appointment. Moreover, urban transport, which is very expensive in England, costs practically nothing in Russia. In most cases a professor has a car at his disposal.

The monthly consumption of food, comprised in the 700 roubles mentioned in the list, includes the following:

Milk	50 pt.	Bread	40 lb.
Butter	20 lb.	Potatoes	100 lb.
Eggs	150	Vegetables	100 lb.
Meat	20 lb.	Fruit	50 lb.
Fish	20 lb.		

The items here listed cost 500 roubles in 1937 and refer to goods of the best quality, which are well up to English standards. The prices are falling steadily.

Cheap clothes are of poor material and good clothing is expensive. Scientific men and their families usually prefer a small assortment of good quality. Dress suits are not worn except by waiters.

Holidays are usually spent in the Caucasus or on the Black Sea coast, which are equivalent to Switzerland and the Mediterranean.

M. RUHEMANN.

30, Clifton Gardens, W.9.

A Binocular Illusion

IF an observer views a piece of linoleum, or pavement, marked out as a checkerboard in light and dark squares, it is possible by causing the lines of vision of the two eyes to converge, that is, locating the fixation point, above the linoleum, to produce the impression that the pattern is raised above the level of the floor, and that it is on a smaller scale than that of the actual linoleum. This occurs when the images of two neighbouring dark squares fall on the corresponding points of the two retinas. A still smaller pattern at a still higher level may be produced when the images of two dark squares, separated actually by two light and one dark square, are caused by suitable convergence to fall on corresponding points of the two retinas.

This illusion is probably known to many, but I can find no description of it in any general or ophthalmic physiology I have been able to consult; and it may be of interest that the phenomenon was brought to my notice by a boy aged nine years. He had discovered it quite independently for himself.

The raised patterns thus produced are seen to shift as the observer moves his head, as may be easily confirmed geometrically.

HENRY H. DIXON.

School of Botany,
Trinity College,
Dublin.
March 22.

Some Observations on the Rotating Pendulum

THE observations by Lythgoe¹ on the 'rotating pendulum' are almost entirely in accord with the hypothesis that the 'latent period' of vision varies in the same sense as the concentration of photochemical substance in the retina of the eye, and is controlled mainly, if not entirely, by this concentration. The concentration of photochemical substance is decreased (a) by a general increase in illumination of the field of view; (b) by the contemporaneous presence of one or more glare sources in the field of view; (c) by the previous presence of glare sources in the field of view. In case (c), of course, the concentration of photochemical substance is steadily returning to its equilibrium value in the absence of glare sources.

Lythgoe has found a relative decrease in the latent