It is proposed to publish a preliminary report on the three skeletons in the *Ceylon Journal of Science*. Detailed consideration will be left until a more complete study has been made, and opportunity for comparison with other reputed Veddah material in the various museums in Europe has been taken. It is also hoped that further new material will shortly be forthcoming from the Bintenne and Tammankaduwa districts of the Veddah country.

I may add that a complete collection of hair from various parts of the body in both sexes and at several ages was taken from the Dhanigala Veddahs. This will be studied and compared with the hairs of other Ceylon races. Further hairs were obtained from graves of Poromala and Handhi. I should be delighted to exchange samples of this for hair of other races with any anthropologist in possession of such material.

Anatomy Department, Medical College, Colombo, Ceylon. Oct. 27. W. C. OSMAN HILL.

Dimensions of Fundamental Units

PROF. W. CRAMP has suggested[1] that the quantities Q, L and T have better claim to be regarded as fundamental than M, L and T. His argument is based on the assumption that Q shall be a function of M. Such an assumption would be a bombshell in modern physics. M, in common with L and T, is a quantity which varies with the velocity of the observer; Q does not so vary.

The wiping out of all fractional indices from the dimensional expressions for the electrical quantities, current, flux, E.M.F., etc., by leaving Q in those expressions is scarcely noteworthy. Fractional indices come into the dimensional expressions for electrical quantities at the outset when, by writing $(Q \times Q/kL) = F = MLT^{-2}$ we find $Q = k^{\frac{1}{2}}M^{\frac{1}{2}}LT^{-1}$. If Q were left in, no fractional indices would appear and also no k; and since, if we neglect both k and μ the ratio of the electromagnetic units to the electrostatic units is always a velocity, or a velocity squared, or the reciprocal of one of these—that is to say, contains no fractional indices—it follows that the presence of Q wipes out fractional indices from dimensional expressions in both the electromagnetic and the electrostatic systems.

F. M. DENTON.

Department of Electrical Engineering, University of New Mexico, Albuquerque. Oct. 19.

NATURE, **130**, 368, Sept. 3, 1932.

MY old student, Prof. F. M. Denton, has, I know, given a good deal of attention to the theory of relativity, and this no doubt has led him to question the possibility of any dimensional relationship between M and Q. While not pretending to have the same knowledge of Einstein's theory, it does seem to me that there is little experimental evidence for the assumption that M varies with the velocity of the observer while Q does not. It would be interesting to know upon what grounds Prof. Denton makes so positive a statement.

The University, Birmingham. Nov. 8. WILLIAM CRAMP.

Recalculation of Mass Defects

THE well-known mass defect curve of the old nuclear scheme calculated with regard to α-particles and protons presented a difficulty with its minimum of binding energy for tin and an increasing portion between tin and lead. On the other hand, the mass defect values against protons give a rather smoothly decreasing curve.[1] As has already been pointed out,[2] the number of α-particles must be considerably reduced from the point of view of the new scheme, which does not admit any electrons in nuclei, but only neutrons and protons (presumably joined as α-particles). The curve of mass defect against protons and neutrons (perhaps with a single 'central' α-particle) is very similar to the old curve against

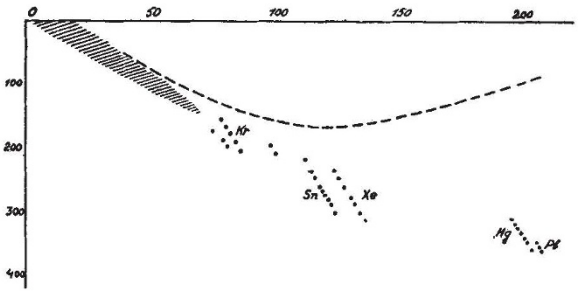

FIG. 1.

protons, but decreases less rapidly. Clearly the new mass defect values relatively to α-particles, neutrons and protons must lie somewhere between the old values computed relative to protons and α-particles respectively (because the number of α-particles is decreased). We may emphasise that this new mass defect curve shows no increasing portion between tin and lead. For illustration we give two typical values:

Old: $50Sn^{124} = 31\alpha + 12\varepsilon$; mass defect = 0·158 (in mass units);
$82Pb^{208} = 52\alpha + 22\varepsilon$; mass defect = 0·035.

New: $50Sn^{124} = 25\alpha + 24\omega$ (ω = neutron); mass defect = 0·304;
$82Pb^{208} = 41\alpha + 44\omega$; mass defect = 0·366.

On the accompanying graph (Fig. 1) are plotted the new mass defect values; the dotted line shows the old smoothed curve.

The significant result mentioned above depends not on the doubtful decimals in the value of neutronic mass but only on the fact that the number of α-particles is diminished in comparison with the number usually admitted, some being split to neutralise the 'nuclear electrons'.

Phys. Tech. Institute, Leningrad-Lesnoi. Oct. 19. D. IWANENKO.

[1] F. Houtermans' article on the constitution of nuclei in *Ergebnisse d. exakten Naturwiss*, *Bd.* 9, p. 124.
[2] D. Iwanenko, *Sow. Phys.*, 1, 820; 1932.

Process of Space Quantisation

THE following note is a report of researches into the process of space quantisation, carried out during the last two years in the Institute of Physical Chemistry in Hamburg.

The problem may be stated as follows. When a ray of potassium atoms is sent through an inhomogeneous magnetic field, it is split into two rays (space quantisation). If one of the rays is then screened out, all atoms in the remaining ray have the same

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