Evolution and Human Origins

MY attention has been directed to the leading article in the issue of NATURE of January 26 in which criticisms are made on an address by me to the Victoria Institute recently. I have no desire to enter into further written controversy on the subject just at present, and you might probably be unable in any case to afford space for it in the pages of NATURE. If, however, no notice were taken of the objections urged, it might be considered that silence gave consent or that no answer is possible. I beg therefore by your courtesy to say that when, as seems probable, a new edition of the address is published, careful consideration will be given to the arguments in your leading article and such counter-arguments or replies presented as are necessary or possible. This will probably be a more convenient way of dealing with them than extending the controversy at the present time in the pages of your valued periodical.

Sidmouth, South Devon. AMBROSE FLEMING.
Feb. 3.

More Work for the R.S.P.C.A.

MUCH satisfaction must have been felt by lovers of the lower animals in reading the review in NATURE of February 2 (p. 164) of the work accomplished by the R.S.P.C.A. since its foundation in 1824. It encourages one to hope that the Society will delay no longer in pressing for prohibition of the cruel practice of docking the tails of horses.

It is not likely that any serious opposition would be offered to such legislation as may be necessary to render docking a penal offence. Something might be accomplished if horses mutilated and disfigured in this senseless manner were disqualified as prize-winners in the show ring; but that would not act as universal prohibition. One has but to watch horses thus mutilated when turned out to grass in summer to realise what they suffer from swarms of flies.

Fortunately, the practice of docking is not nearly so general as it used to be. During the Peninsular War, the Duke of Wellington required all cavalry chargers to be so treated in order that they might be distinguished from those in the French army. At the present time, however, the horses of British cavalry and those in all racing and most hunting establishments are not docked; but many farm horses and trotting cobs are still subject to the removal of some of their lower vertebræ.

HERBERT MAXWELL.

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Points from Foregoing Letters

THE behaviour of liquid helium indicates that it exists in two forms, helium I and helium II. Their viscosities have been determined in Prof. E. F. Burton's laboratory at Toronto. It appears that when helium I, which is formed at 4·2° K, is further cooled, it becomes more viscous down to 2·3° K; at 2·2° K the liquid suddenly becomes more fluid as it changes into helium II.

Thin layers of carbonaceous fossil plants such as are present in coal, while opaque to ordinary light, allow the passage of infra-red radiation. Prof. John Walton submits photographs of a fossil plant taken in red and infra-red light, the latter showing marked internal structure.

It has been suggested that γ-radiation may be changed into positive electrons and vice versa. Dr. E. J. Williams finds that very thin lead foils (about 0·002 cm. thick), when irradiated with γ-rays from thorium C″, yield less than the calculated amount of secondary γ-rays. This he interprets as evidence that the positive electrons produced by the original γ-rays escape from the lead-foils before they are 'annihilated' and changed into the softer secondary γ-rays. The more penetrating γ-rays scattered by lead-foil are ascribed to γ-radiation from recoil electrons and to the annihilation of positive electrons before reaching the end of their journey.

Colchicine, the active substance from the seeds and corm of the meadow saffron, hitherto used in the treatment of gout, has been found by Dr. E. C. Amoroso to be effective in treating a spontaneous tumour in a dog. Dr. Amoroso also states that colchicine has effected the regression of tumours transplanted on mice.

Prof. B. C. P. Jansen supports Kuhn's claim that lactoflavine is identical with the originally described vitamin B_2, since both have identical effects on dogs and rats and are rendered inactive by exposure to sunlight. Prof. Jansen advocates the use of descriptive names instead of letters to indicate the various vitamins.

Prof. W. T. David has put forward the view that 'metastable molecules' account for the after-glow of gases following upon an explosive reaction. Dr. S. Steele recalls previous observations showing prolonged emission of infra-red radiation during the explosive reactions which take place in a combustion engine. He suggests that in an engine cylinder some metastable H_2O and CO_2 molecules may be formed.

The magnetic susceptibility of freshly melted water increases during the first twenty minutes and then falls to a constant level. This is explained by Dr. F. W. Gray and Mr. J. H. Cruickshank as due to the lag in the rearrangement of the water molecules (each molecule of H_2O is surrounded by four others in a more or less tetrahedron fashion; this arrangement is somewhat different in ice and in water). With heavy water a similar but less pronounced change with time is observed.

Dr. N. H. Hartshorne directs attention to the fact that transparent cellulose sheets behave towards light in a manner similar to that of crystals of mica, selenite and quartz, and in appropriate thicknesses may be substituted for them in making compensating plates and wedges for the polarising microscope.

Commenting on a letter from Sir James Henderson, Prof. Wilberforce shows that the accepted theory of the identity between magnetic phenomena and electronic motion does not establish, as a necessary deduction, the equations $\mu_0 = 1$, $K_0 = 1/c^2$, but on the contrary suggests a different 'natural' system of electromagnetic measurement attractive in theory but inconvenient in practice. The theory of dimensions has often been useful in deducing new physical laws.