Races with a High Proportion of Blood Group *AB*

IN a "Research Item" in NATURE of October 2, the failure of Miss Macfarlane to confirm the high percentage of Group *AB* previously found in Tibetans is reported. May I quote another race with a high proportion of Group *AB* ?

In an investigation of 1,000 Soussoux in French Guinea, J. S. de Goldfiem[1] obtained the following results.

BLOOD GROUPS OF SOUSSOUX

	No.	O	A	R	AR
Adults	500	1%	1%	9%	89%
Children	500	1%	1%	9%	89%

This race is of interest in that the percentage of *AB* exceeds 50 per cent which is the theoretical maximum in a stable race, for, where *p*, *q* and *r* are the frequencies of genes *A*, *B* and *R* respectively, then $p + q + r = 1$ and $2\ pq = AB = $ a maximum $= 0·50$, where $p = 0·50$ and $q = 0·50$.

A race having this group distribution could arise as the result of the mating between a race having more than 90 per cent *A* on one hand and a race having more than 90 per cent *B* on the other, but this group distribution would only appear in the first generation—and stability would be reached in the second. For example, in the race in question, the *A* and *B* children arising from the matings between *AB* and *AB* only would form nearly 40 per cent of the total children, using the formula :

$$A \text{ children from } AB \times AB \text{ matings} = 100\ \frac{(AB)^2}{4}$$

per cent of total children.

A mutation occurring in this race at the present time could not, I think, give rise to this phenomenon. It must be pointed out that Beth Vincent's technique was used for this observation.

R. ELSDON DEW.

South African Institute
for Medical Research,
Johannesburg.
Nov. 11.

de Goldflem, J. S., *C.R. Soc. Biol.*, **123**, 391 (1936).

Anomalous Dielectric Constant of Artificial Ionosphere

APROPOS our letter in NATURE of October 2, p. 586, it has been pointed out to us by Prof. E. V. Appleton and Dr. F. W. Chapman that though the curves delineating the variations of μ^2 with N and $1/f^2$ are quite correct, they cannot, however, be regarded as showing the relation between K and N, or $1/f^2$. In fact μ^2 can be identified with K only when $\nu = 0$. In the general case, for a conducting medium, $\mu^2 = K + \dfrac{c^2 k^2}{p^2}$. Thus, though μ^2 can take up values both greater and less than unity, as depicted in Figs. 1 and 2 of our letter, K cannot do so because $\mu^2 - \dfrac{c^2 k^2}{p^2}$ can only have values equal to or less than unity.

S. K. MITRA.
K. K. ROY.

University College of Science,
92 Upper Circular Road,
Calcutta.
Nov. 11.

Points from Foregoing Letters

A TABLE showing the amounts of radioactive phosphorus (relative to the total phosphorus) in the yolk of eggs, the liver and the blood of a hen, 28 hours after it had been administered by subcutaneous injection, is submitted by L. Hahn and Prof. G. Hevesy. From the present and previous experiments the authors infer that the liver of the hen (and not the blood corpuscles) is responsible for the formation of the phosphatides. These are then carried by the plasma to the ovaries.

A curve showing the usual form of the phase variation of the abnormal component of low-frequency radio waves near sunset is given by K. G. Budden and J. A. Ratcliffe ; also an example of a type of disturbance of the curve which, the authors find, is connected with 'fade-outs' or with magnetic anomalies. They conclude that a 'catastrophic' ionospheric disturbance decreases the reflection height of the low-frequency waves.

By applying a magnetic field (16 gauss) to a low-pressure bulb containing 'gas' ionized by short radio waves (6 m.), E. W. B. Gill has been able to reduce considerably (to $\frac{1}{400}$th) the ionizing potential needed for producing an electrodeless discharge. The author states that his experiments confirm Prof. V. A. Bailey's theory on what happens to wireless waves in the upper atmosphere.

J. W. Thompson, Wm. Corwin and J. H. Aste-Salazar find that, as compared with normal persons, the mentally unbalanced (schizophrenic) individuals show less physiological susceptibility to changed external conditions. Generally speaking, they have regular respiration, small tidal air and cardiac output, low blood pressure, low basal metabolic rate, high arterial carbon dioxide and low oxygen saturation.

The activity of tetanus toxin is found by Drs. J. B. Bateman, H. Loewenthal and H. Rosenberg to be unaffected by a high-frequency field (radio waves of 3 m. length and potential gradient of 2,500 v./cm.) when conditions were such as to prevent heating.

Dr. D. L. Gunn, J. S. Kennedy and D. P. Pielou propose alterations in Kühn's classification of animal reactions. The new terms make clearer the relations between the various reactions, they are not anthropomorphic like some of those discarded, and confusion between them no longer arises from their similarity of pronunciation.

Dr. S. G. Gibbons directs attention to observed differences in the development of the copepod *Eucalanus elongatus* in Californian as compared with Scottish waters. He asks if it is possible that the colder temperature of the water off the west of Scotland may prolong the incubation period so that the animal emerges from the egg in the second nauplius stage.

Using recent additional information on the infra-red spectrum of carbon suboxide, Dr. H. W. Thompson and J. W. Linnett have recalculated the force-constants of the linkage in the molecule of that compound. The new values, they state, strengthen the hypothesis that the bonds are intermediate between the double and the triple types.