

Formerly  $x$  and  $2x$  were in universal use for the haploid and diploid chromosome numbers. Since then, usage has gradually shifted to  $n$  and  $2n$ , presumably to avoid confusion with  $X$ , which began, after 1900, to be used for the sex chromosome; but  $x$  and  $2x$  are still employed to some extent in the original sense, as previously pointed out<sup>2</sup>, so three uses of the symbol in relation to chromosomes have to be distinguished.

In these circumstances, and in view of the place  $x$  has already had in the nomenclature of chromosomes, confusion can only be avoided by adopting a new symbol for the new conception, and I suggest  $b$  as a suitable symbol for the basic number.

Since this was written, I find that  $b$  as a symbol for the basic chromosome number has already been proposed by Sinotó<sup>3</sup>.

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<sup>1</sup> NATURE, 135, 109, Jan 19, 1935.

<sup>2</sup> NATURE, 134, 1011, Dec. 29, 1934.

<sup>3</sup> "Chromosome Studies in some dicocious Plants, with special Reference to the Allosomes." *Cytologia*, 1, 112; 1929.

### Miss Mirsky's "Northern Conquest"

IN my review of this delightful book I was wrong in making it appear on p. 884 of NATURE for December 8 that the work was done under the critical supervision of Dr. Stefansson. I now know that this was not the case. The great explorer did not see the book until it was submitted to him in a complete form by the publisher. Miss Mirsky is thus entitled to all the credit for her brilliant work.

In mitigation of my blunder, I can only say that, like the writer of the legendary article on Chinese metaphysics, I must have combined the information derived from two unrelated statements. These were the phrases in Miss Mirsky's prefatory note: (1) "During the three and a half years I spent on the book . . ." and (2) ". . . the generosity with which Vilhjalmur Stefansson placed his fine library at my disposal". Of course, I should not have inferred that the book was written in that library, the use of which only contributed to the compilation of the illustrative maps.

HUGH ROBERT MILL.

### Points from Foregoing Letters

COSMIC rays are identified as particles accelerated to a speed near to that of light by the gravitational pull of the rest of the universe in the kinematic world model put forward by Prof. E. A. Milne. There is no upper limit to the energy that such a particle may acquire, since it is drawn from that of the whole universe.

According to Dr. G. I. Finch and Mr. A. G. Quarrell, the 'extra' rings observed in certain X-ray diffraction patterns are due to the shape of the minute crystals that compose the materials investigated, and may therefore help in finding the shape of sub-microscopic crystals. The ordinary X-ray diffraction rings are due, of course, to the lattice arrangement of atoms within the crystals.

Male hormone extracts, obtained from testes and from urine, while possessing the same power of stimulating growth of combs on capons, are found by Messrs. E. Dingemans, J. Freud and E. Lacqueur to differ in their effect upon the growth of seminal vesicles in castrated male rats. This shows that the urinary and testicular extracts used are not identical.

Prof. A. I. Virtanen and Mr. S. v. Hausen point out that the nitrogen compounds (amino-acids) found in soil where leguminous plants are grown are excreted by the bacteria nodules of their roots and are not attributable to mechanical wounding of the roots, because it can be shown that excretion takes place also on an agar culture, provided access of air to nodules is facilitated. The authors have further discovered that pea and clover nodules containing bacteria can produce butyric fermentation of glucose, and they suggest that the bacteria are supplied by the plant with a suitable sugar, which provides energy for the nitrogen fixation. More knowledge of this mechanism may lead to the discovery of the conditions necessary in order that the bacteria may fix the nitrogen of the air *in vitro*.

Dr. G. Kornfeld and M. McCaig find that small amounts of sulphur monoxide present in sulphur dioxide after an electrodeless discharge, can be detected by means of the emission spectrum, but not

by means of the absorption spectrum, because the dioxide itself has strong absorption bands similar to those of the monoxide.

Dr. C. P. Snow and Mr. E. Eastwood point out, as possible sources of error in determining the absorption spectrum of vapours, the possible presence of small amounts of impurities and the effect of interference bands due to the quartz plates of the apparatus.

Thin films of liquid such as may exist in finely porous materials have properties different from those of liquids in bulk. Messrs. B. H. Wilsdon, D. G. R. Bonnell and M. E. Nottage mention their lower vapour pressure, with which is related the greater hydrostatic suction needed to remove water from certain building materials. Their osmotic pressure and electrical properties are also abnormal. The authors point out that the behaviour of thin films may be connected with the fact that their molecules form more or less orientated chains.

Mr. D. H. Follett directs attention to the fact that at present, when a photo-cell is used to amplify galvanometer deflections, the amplified deflections are not proportional to the original. He describes an improved instrument avoiding this difficulty.

Neutrons and ultra-violet radiation have been suggested as possible agents responsible for the ionisation present in the electrically-conducting layers of the upper atmosphere which reflect radio waves. Eclipse observations have ruled out the neutrons as active agents, while the ultra-violet radiation, from calculations by Dr. E. A. W. Müller, cannot penetrate in sufficient amounts as far as the *E*-layer (100 km. high). To account for that effect Müller assumes that the sun emits, in addition, a more penetrating radiation of the X-ray type.

The search for oil has supplied valuable information to geological science in the past. Lieut.-Col. L. M. Davies announces that an examination of the fossils from the early tertiary (Eocene) beds of the Punjab Salt Range in the sub-Himalayan zone shows that these strata belong to two distinct formations (Ranikot and Upper Laki).