Codeine in Indian Opium

AN anomaly has crept into my article on "Chemistry of Indian Opium" published in *NATURE* of July 17, 1937 (140, 92-93).

On p. 92 (col. 1), the figure for the codeine content of Indian opium is correctly given as 1-2 per cent. On the same page (col. 2), at the end of the first paragraph, the codeine content of opium is shown as 2-4 per cent. This latter figure was taken from a departmental report rather difficult of access, and is the figure given by Prof. Dunston. The reference was given in the original article, but was unfortunately eliminated in the process of compression.

In his "A.B.C. of Narcotic Drugs", O. Anselmino also gives this figure for codeine in opium in the words: "Said to be 2 to 4% at Jeypore". It is not stated upon what analytical basis these figures are quoted, but it should be made clear that the usual codeine content of Indian Excise opium is between 1 and 2 per cent.

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Points from Foregoing Letters

FURTHER evidence for nuclear transformation by the capture of a *K*-electron from the extra-nuclear structure is provided by Wilson-cloud photographs, submitted by Dr. E. J. Williams and E. Pickup, of the photo-electrons produced by the *K*-characteristic radiation, the emission of which follows the removal of the *K*-electron. The striking feature is that, for the active nucleus concerned in these experiments, the capture of a *K*-electron appears to be at least 1000 times more probable than the emission of a positive electron, a process which would lead to the same final nucleus.

Auroral spectra obtained by Prof. L. Vegard show that the relative intensity of the red line 6300 Å. increases in passing to the upper part of the aurora (type *A*), while the relative intensity of the green line 5577 is greater in the lower auroral region. Prof. Vegard suggests that the enhancement of the red at the higher altitude may be due to oxygen atoms excited to the 1D_2 state through collisions between metastable nitrogen molecules and ozone molecules, produced by the short-wave radiation from the sun. Type *B* of red auroras have a red colour along the lower border due to an increase in the intensity of the first positive group of red lines, in the infrequent cases when the aurora reaches very low altitude.

In connexion with the hypothesis concerning the origin of the zodiacal light, Sir Joseph Larmor directs attention to an error for which he was responsible in reprinting Poynting's Collected Papers, which resulted in doubling the value of the suction of fine orbital dust into the sun. Sir Joseph envisages a nebula-like thick disk around the sun, remains of the original whirling solar nebula, still existing beyond the earth's orbit. This nebula may be considered of the type of the rings of Saturn, only enormously less closely packed. Its particles, as shown by the fact that the zodiacal light shows no scattering effect, must be larger than the wave-length of light.

Dr. A. Mercier states that if one tries to define a model of the primitive earth as a polytropic gas sphere, the conditions in its interior are found to be such that metallic vapours, particularly iron, must condense in a thick outer layer, from which the iron core usually postulated is produced.

Lieut.-Colonel L. M. Davies reports the discovery by A. G. Davis, recently confirmed by himself, of characteristic Upper Ranikot (Palaeocene) fossils in beds on the western frontier of Persia. This is much the most western location of true Ranikot beds yet to have been recorded.

Further evidence concerning the probable structure of corticosterone (an active crystalline compound

from the adrenal gland) is reported by M. Steiger and Prof. T. Reichstein, who find that corticosterone can be chemically transformed into the hydrocarbon allopregnane. The presence of a steroid structure is supported by the new data.

By adding ascorbic acid to the blood plasma, plus sodium oxalate, of a fowl affected by erythroblastosis (a disease characterized by the presence in the bone marrow of large numbers of colourless nucleated cells thought to be rudimentary red blood corpuscles) Dr. E. Morelli and Dr. A. Vercellone find that an inactive material is precipitated while the clear fluid becomes more active than before in producing the disease in other fowl. This result differs from that obtained by Claude and co-workers; in a somewhat analogous case, they found that the activity of the plasma in the case of fowls suffering from Rous sarcoma, the active principle was carried down by the precipitate upon acidifying the liquid.

By germinating Bengal gram in distilled water and in solutions with manganese equivalents of 1 in 10^6 , 1 in 10^5 and 1 in 10^4 , M. N. Rudra finds that the amounts of ascorbic acid synthesized in the latter solutions are higher than those produced in distilled water.

An experiment indicating that the carotene and xanthophyll in cooked spinach and carrots is almost entirely excreted in the faeces, is described by M. van Eekelen and W. Pannevis. Better assimilation takes place when the carotene and xanthophyll are dissolved in oil.

The study by K. C. Misra of the floral anatomy of *Wormia triquetra*, *W. Burbidgei* and *Dillenia indica*, three members of the Dilleniaceae, has brought to light two very unusual features. First, the flower stalk contains several conducting strands, and secondly, the ovular trace branches repeatedly within the ovule.

Boris Ephrussi, Yvonne Khouvine and Simon Chevais find that *Calliphora* extracts considerably increase the number of facets in the eye of the Bar mutant of *Drosophila melanogaster*. They think that the extract contains a morphogenetic (facet-forming) substance under genetic control.

From tests on Armeo iron wire, Dr. T. F. Wall infers that there is one diameter for which the permeability of the wire is a maximum and that the permeability rapidly falls off as the diameter is increased or decreased from this critical value; also that there is a surface layer of the wire which is magnetically harder than the core; and that by coating the wire with suitable material followed by heat treatment, the magnetic quality may be controlled over a wide range.