

A Supposed Ancestral Man in North America.¹

By Dr. A. SMITH WOODWARD, F.R.S.

PROF. H. F. OSBORN has just described a water-worn small molar tooth from a Pliocene formation in Nebraska, U.S.A., as the first evidence of an anthropoid primate discovered in the New World. The specimen was found in the Snake Creek beds by Mr. Harold J. Cook, who has already made known numerous important remains of Pliocene mammals from Nebraska, some showing marked Asiatic affinities. With the aid of Drs. W. D. Matthew, W. K. Gregory, and M. Hellman, Prof. Osborn has determined the tooth to be a second upper molar, and he has named the unknown genus and species to which it belonged *Hesperopithecus haroldcookii*. It is nearly as large as the second upper molar of an American Indian, and its two diameters are almost equal. The kind of wear shown by its evenly concave coronal surface "has never been seen in an anthropoid tooth." In type the tooth is "very distant" from the corresponding tooth of the gorilla, gibbon, and orang; it is "still very remote" from that of a chimpanzee. It is also "excluded from close affinity to the fossil Asiatic anthropoid apes" represented by teeth found in India; and "it cannot be said to resemble any known type of human molar very closely." Indeed, "it is a new and independent type of Primate, and we must seek more material before we can determine its relationships."

The statements quoted make it difficult for one who has not seen the tooth to understand why Prof. Osborn even refers it to a Primate; and the published figures are not very helpful. The crown may be described as nearly triangular in shape, with bluntly rounded angles, a slightly raised and partially crimped rim surrounding a gently concave surface. The root

¹ H. F. Osborn, "*Hesperopithecus*, the first Anthropoid Primate found in America," *American Museum Novitates*, No. 37 (reprinted, without figures, in *Science*, vol. 55, pp. 463-465, May 5, 1922).

is very massive, and at a considerable distance below the crown it becomes bifid, the smaller portion extended beneath one margin of the crown, the larger portion beneath and inclined towards the opposite apex. On one side of the root, between the bifurcation and the crown, there is an irregular indentation, from which Prof. Osborn supposes a third root-fang has been broken away. No stump of this third fang, however, is shown in the drawing.

In determining the tooth to be an upper molar, Prof. Osborn regards the edge with the smaller portion of root as external, and the tapering opposite end with the larger portion of root as internal. The hypothetically restored piece of root thus becomes posterior. It is, however, equally reasonable to interpret the so-called external border as anterior and the tapering end as posterior. If, then, the indented lateral portion of the root never bore another fang, the tooth becomes a lower molar. If this interpretation be admitted, comparison should be made not with any Primate tooth, but with the last lower molar in the primitive bears. In general appearance and shape the crown is very suggestive of that of the last molar in the lower jaw of some species ascribed to *Hyænarctos* and related genera; and as primitive bears of this group are already known by several fragments from the Pliocene of North America, material will eventually be available for comparison. The root of the last lower molar of *Hyænarctos* unfortunately appears to be unknown; but in the modern *Ursus*, in which the tooth in question is extremely variable, the root is often bifid, as in the new fossil from Nebraska, while between the bifurcation and the crown there is a hollowing of its outer face. There is, indeed, some reason to suspect that *Hesperopithecus* has received an inappropriate name.

Synthetic Dyes as Antiseptics and Chemotherapeutic Agents.

By Prof. C. H. BROWNING, University of Glasgow.

GENERAL interest in this subject has been recently stimulated by accounts in the daily press of a communication to the Society of Chemical Industry at Manchester by Messrs. Fairbrother and Renshaw.¹ The fact, however, ought not to be overlooked that much work has been in the past devoted to these problems by a number of investigators. That certain dyes of the triphenylmethane class possess marked antiseptic properties has long been known. Thus Stilling² in 1890 noted the powerful effect of ethyl violet on staphylococci (one of the commonest group of organisms which cause suppuration). He suggested the use of a mixture of allied dyes in the treatment of infective conditions, especially of the eye. But Stilling's suggestion found little favour with practical surgeons. As compared with phenol or mercuric chloride, the antiseptic dye-stuffs in general exert their lethal action on bacteria relatively slowly; thus, when tested by the usual method, in which only a brief period of contact between the organisms and the

chemical agent is permitted, these dyes appear to act very weakly. It is probably for this reason that they were neglected.

The fact was overlooked that from the beginning of contact very high dilutions of antiseptic dyes may inhibit bacterial activity and that such "bacteriostatic" action can be utilised advantageously for therapeutic purposes. Churchman,³ however, in America has investigated more recently the allied product, gentian violet, and has emphasised its value in the treatment of certain local pyogenic infections. The diaminotriphenylmethane dyes, malachite green and brilliant green, were shown to be actively antiseptic by Drigalski and Conradi⁴ in 1902, and brilliant green has been applied with success in the treatment of infected wounds.

Investigations carried out with the view of comparing the antiseptic properties of various classes of dyes by Browning and Gilmour⁵ confirmed the fact that a considerable number of basic compounds showed