

Hypothesis

WIDOW'S PEAK SCALP-HAIR ANOMALY AND ITS RELATION TO OCULAR HYPERTELORISM

DAVID W. SMITH M. MICHAEL COHEN
Dysmorphology Unit, Department of Pediatrics,
University of Washington School of Medicine, Seattle,
Washington 98195, U.S.A.

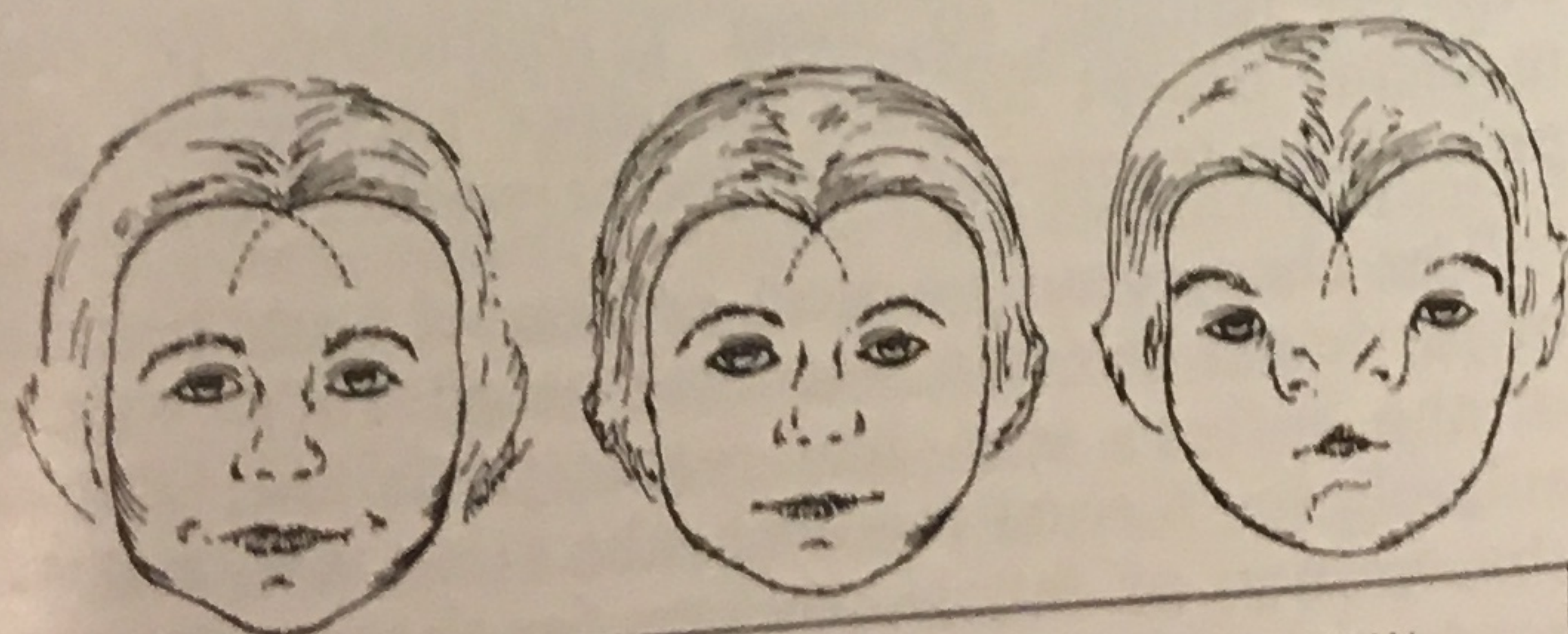
Summary A hypothesis which explains the association between ocular hypertelorism and widow's peak was suggested by findings in an unusual case of ocular hypertelorism in which surrounding scalp-hair growth was suppressed by an ectopic eye. The widow's peak scalp-hair anomaly is interpreted as being the result of a lower than usual position of intersection of the bilateral periorbital fields of hair-growth suppression on the forehead. This can occur because the periorbital fields of hair-growth suppression are smaller than usual or because they are widely spaced. The latter explains the association between ocular hypertelorism and widow's peak.

INTRODUCTION

AN understanding of the developmental pathogenesis of a given anomaly may often be of value in determining the importance and relevance of the defect. The following report sets out a hypothesis for the origin and significance of a minor anomaly, the V-shaped midline downward projection of the anterior scalp hair, often referred to as the widow's peak—a term derived from the front of the now obsolete head-dress which was worn by some widows.

FINDINGS AND HYPOTHESIS

Widow's peak is an occasional finding in otherwise normal individuals. We know of instances of the familial occurrence of mild widow's peak. Evaluation of the photographs of 1039 non-balding male University of Washington medical students from the classes of 1953–70, before the era of longer hair, disclosed 32 with a slight but noticeable widow's peak (3%)



PERIORBITAL FIELDS	NORMAL	DECREASED	NORMAL
INTEROCULAR DISTANCE	NORMAL	NORMAL	INCREASED

Fig. 1—Upper facial fields of periorbital hair-growth suppression.
Normal girl (left), normal girl with reduced size of the periorbital fields of hair-growth suppression and widow's peak (middle), and girl with ocular hypertelorism and widow's peak secondary to frontonasal dysplasia (right). Intersecting lines represent the hypothetical limits of periorbital hair-growth suppression.

and one with a more distinctive and obvious widow's peak (0.1%). None of these men with widow's peaks had noticeable ocular hypertelorism. However, a more pronounced widow's peak is commonly associated with true ocular hypertelorism. For example, it was noted in 44% of 23 cases of the median-cleft-face syndrome^{1,2}—more suitably called frontonasal dysplasia—in which there may be pronounced ocular hypertelorism (fig. 1). Lesser degrees of ocular hypertelorism may occur as a feature in certain other syndromes, such as the Aarskog syndrome, in which 6 of 10 cases had a widow's peak.³ A hypothesis for explaining this association between ocular hypertelorism and widow's peak was suggested by the findings in a patient shown in fig. 2. This mentally deficient boy had a normal right eye, an incompletely developed left eye in the usual region, and what was interpreted as an aberrantly placed minute accessory eye in the left temporal region. The latter was presumed to be the consequence of a laterally displaced rudimentary accessory optic cup in early development. The eyebrow and few eyelashes are of note, but of special interest is the lack of hair growth in the surrounding area, a region which would normally be covered by scalp hair. Thus, besides inducing the growth of eyebrow and lashes, this ectopic rudimentary eye apparently resulted in suppression of hair growth in the periorbital region. As a result of this unusual case we suggest that, besides inducing the growth of eyebrows and lashes, the eye normally causes suppression of hair growth in the developmental field around it. Normally, the two areas of periorbital hair-growth suppression overlap sufficiently high up on the forehead so that there is no widow's peak.

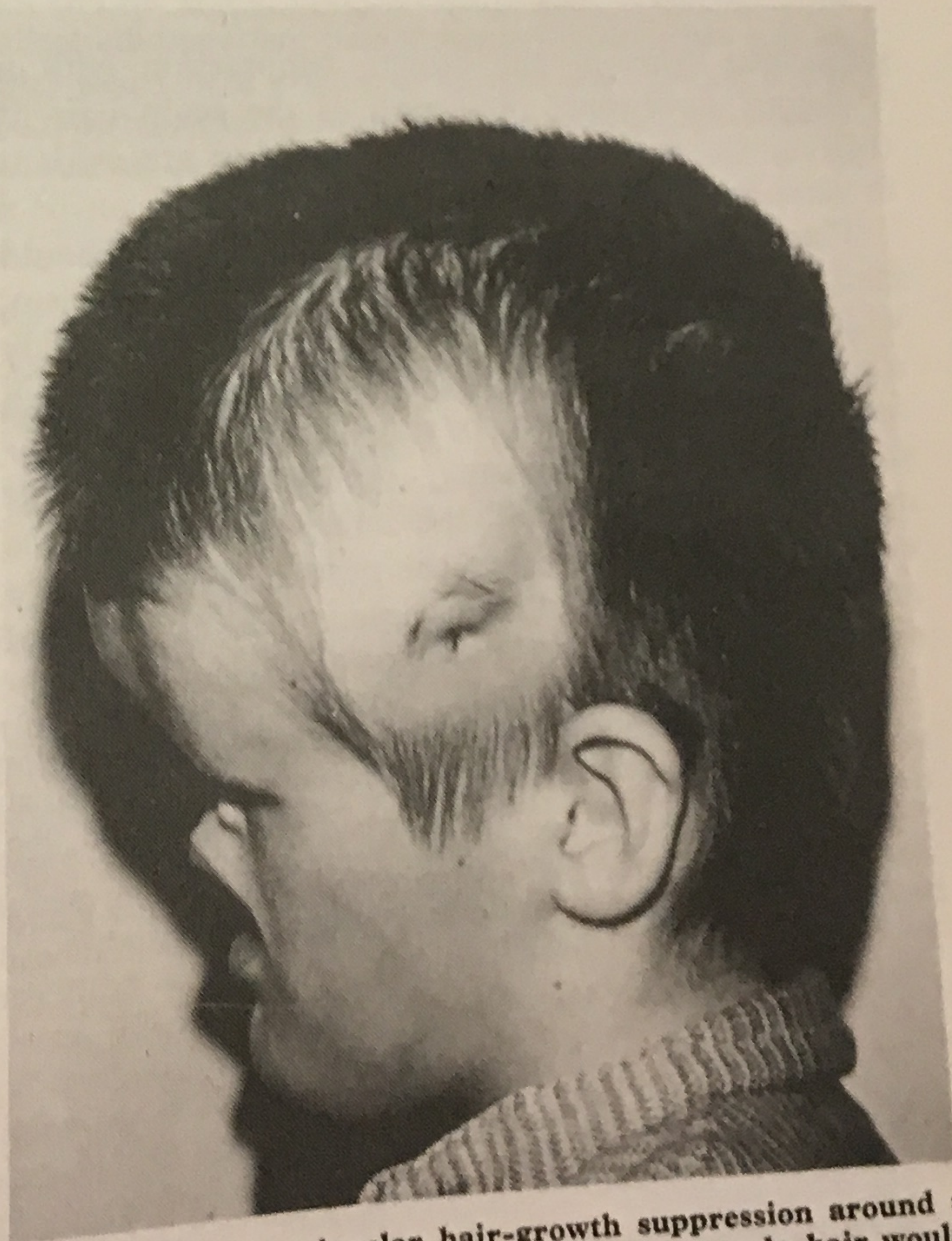


Fig. 2—Area of periorbital hair-growth suppression around a rudimentary ectopic eye in a region where scalp hair would normally be growing.
(From Peterson et al.⁴)

However, when the fields of periocular hair-growth suppression are widely spaced in early development, as in ocular hypertelorism, the superior point of intersection between the two fields may occur lower on the forehead, resulting in a V-shaped midline downward projection of scalp hair—the widow's peak. Fig. 1 illustrates this hypothesis.

COMMENT

We postulate that a widow's peak is a secondary minor anomaly, the consequence of a lower point of superior intersection of the periocular developmental fields of hair-growth suppression, allowing for a midline extension of scalp hair growth on to the forehead. This could be the consequence of increased distance between the eyes—ocular hypertelorism—or of reduced size and/or shape of the developmental fields of periocular hair-growth suppression, as shown in fig. 1. The latter is the presumed explanation for the widow's peak in individuals who have normal intraocular distance. Examples of smaller

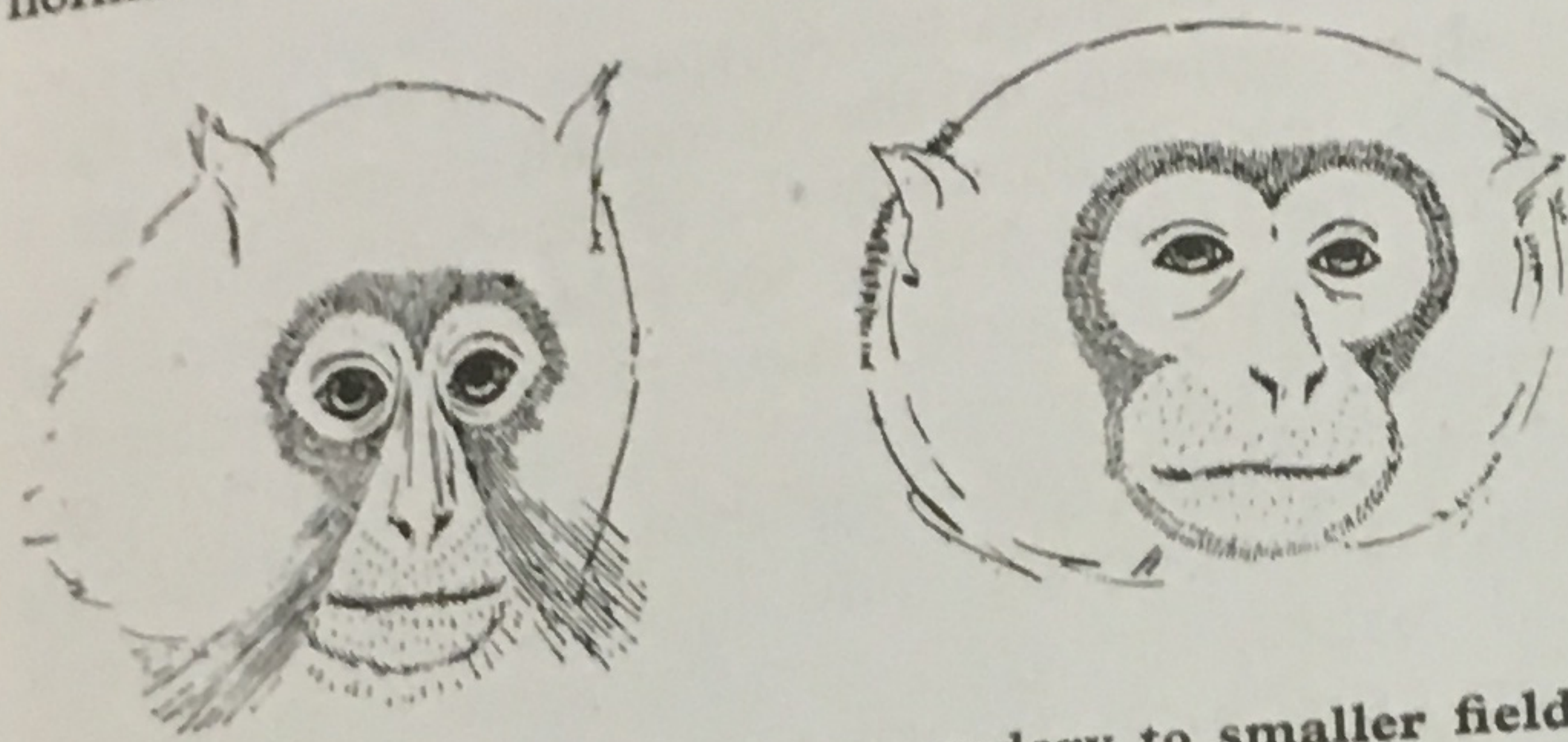


Fig. 3—Widow's peak, presumably secondary to smaller fields of periocular hair-growth suppression in simians.

Cercopithecus albogularis Kolbi (left) and *Symphangus syndactylus* (gibbon) (right).

periocular fields of hair-growth suppression with a V-shaped downward projection of the scalp hair at their upper median point of intersection are evident in some simians (fig. 3).

Therefore, the detection of a widow's peak should lead the clinician to measure for ocular hypertelorism, which if diagnosed as the more primary anomaly would indicate that the many syndromes in which ocular hypertelorism can be a feature should be considered.⁴ More commonly, especially with slight degrees of widow's peak, the interpupillary distance will be found to be within the normal range for age and the widow's peak may be interpreted as a normal variant.

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Requests for reprints should be addressed to D. W. S.

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Medicine and Public Health in the People's Republic of China

Edited by JOSEPH R. QUINN, PH.D.,
States Department of Health, Education,
1973. Pp. 333.

THE first in this series, commissioned by the International Center, dealt with the development of the revived interest in matters of health in the States, after the détente between China and the United States. The "ping-pong" diplomacy, which taught and to demonstrate, especially in the potential value of China's example, fulfilling this objective since it is largely a result of graphical researches. Only two of the Chinese medicine a focus of their interest, but whets the appetite, but fails to

The three main sections deal with the current research doctrine. The first section, through the ages; health care and the likely major health problems of the twenty-four years since the revolution made to fuse the benefits of Chinese modern Western medicine. Their combined and the rural medical cooperatives, Western-type trained doctors in clinic, this has not been without severe ideological during the "great leap forward" in 1958, cultural revolution of 1966.

Acupuncture and Chinese pharmacology, Chairman Mao Tse-tung himself as "house. Efforts should be made to exploit them to a higher level". The observations in this book recognise the essential views in this book recognise the essential the Chinese approach. From 1949, statutory laws were the basis of the directives of the Ministry of Public Health, prevention and treatment, medical personnel, and the use of Chinese medicine. Fifty-four of the legal documents on public out in note form in a fascinating mixture of and communist party propaganda. Lately, decline in the reliance on statutory kind. These laws and the basic type of will be familiar to most practitioners of medicine except for the influence of production teams and the doctor/worker

Cord Injuries, Cord Research

Sir LUDWIG GUTTMAN, Director, National Spinal Hospital, Aylesbury. Oxford, 1973. Pp. 696.

NE opens this long-awakened considerable pleasure, fully fulfilled. This book, which created a new method of insights and new techniques of rehabilitation of paraplegics into practice, has put them accepted through the book begins with a historical survey, anatomical and spinal cord injuries, and the complications of spinal cord injuries, and the physiological and research

No book about China would be complete without a chapter at least on population, the country's problem. The 1953 census is discussed, based all calculations of present population on the United Nations report of 1971 as almost a three-year closure after the 1966 cultural revolution. However, projections over the next 10-15 years