

REGIONAL DIFFERENTIATION IN ALOPECIA OF THE
EYEBROWS IN LEPROMATOUS LEPROSY

That the patient with lepromatous leprosy is liable sooner or later to lose his eyebrows is common knowledge. Not of common knowledge is the reason for the curious fact that the lateral portions of the eyebrows—the outer third, or perhaps half—should be affected first and for a long time most severely. No attempted explanation of this minor but intriguing peculiarity has been found in any text consulted.

Some twenty years ago, in personal conversation, N. E. Wayson, then at the Kalihi Hospital in Honolulu, offered an explanation which—as we vaguely recalled it—had to do with some developmental factor. He was recently asked about it, but it turned out that he himself did not recall it either; he offered the very broad suggestion that the condition would be ascribable to an evolutionary or phylogenic development rather than an ontogenic one—i.e., evolution of the species rather than of the individual.

The question was then passed to an anatomist known to be especially interested in embryology, Cummins, at Tulane University, with the expectation that at least a satisfactory theoretical answer would derive from that discipline. That proved not the case; Cummins offered suggestions and then advised that inquiry be made of two anatomists who have specialized on the hair, Trotter in St. Louis and Danforth at Stanford. In the meantime certain of our regular correspondents were told of the inquiry and they cooperated, so that contributions have been received from Hoerr, in Cleveland, Warren, in Detroit, and—following a suggestion by Wolcott, of Carville—Kindred, of Charlottesville, Va. We desire to express appreciation of the cooperation of all of these contributors.

The essential features of the replies received appear as a symposium in the correspondence section of this issue. They offer interesting and provocative reading, although there is no consensus to be derived except that there is nothing known in embryology that would explain the peculiarity—or, for that matter, in the field of phylogeny.

Cummins offers suggestions to which the two specialists on the hair to whom he recommended the question be referred also subscribe, with further comments. One of them, Trotter, points out that there are other conditions which affect the lateral part of the eyebrow earlier than the medial part, so that this peculiarity of selection is not confined to alopecia. The other, Danforth, is under the impression that this differential loss of hair occurs in other conditions than leprosy. In keeping with that view is a case report which was chanced upon during the period of this inquiry.

A young Negro child who had ingested a rodenticide whose active ingredient is a dicoumarin derivative (Warfarin), an anticoagulant, suffered severe abdominal distress, with copious vomiting and diarrhea, but soon recovered. Two to three weeks later, however, she lost—temporarily—almost all of her scalp hair, part of the eyelashes—and the outer thirds of the eyebrows. [Cornbleet, T. and Hoit, L. *A.M.A. Arch. Dermatol.* **75** (1957) 440-441.]

One of the contributors, Hoerr, makes the pertinent suggestion that the answer may lie in pathology rather than embryology. We know of no inquiry on the point. Dual biopsies of patients from the two parts of the region concerned would be slightly difficult to obtain under most circumstances. Such specimens might be gotten in an active autopsy service in a leprosarium, but usually that mutilation of the faces of dead bodies would not be permissible. In any event, if there should be found a pathologic difference—e.g., in degree or location of lepromatous infiltration—there would still remain the question of why that should be.

Warren, a dermatologist, first considers the phylogeny suggestion, and then speculates about the blood and nerve supply of the region. He is no more successful, however, at arriving at a definite explanation than anyone else.

The tip from Wolcott that Kindred had expressed the view that the lateral parts of the eyebrows have different embryologic origin from the medial part seemed promising. Kindred supplies information about his study of a cyclopean monster which led him to offer that suggestion, but then he proceeds to point out anatomic features which lead to the conclusion that the shifting of the germ layers in this region during development must be so great that changes in later life can hardly be ascribed to that factor.

We come out, therefore, about where we went in with respect to a specific answer to the question of why, in lepromatous leprosy—and, it appears, in other conditions as well—the lateral parts of the eyebrows are more susceptible to loss than the medial portions. If any reader can offer an explanation to this intriguing question, there are others than leprologists who would be interested to learn of it.

—H. W. W.