

# On the process of hair turning white

Elie Metchnikoff

▶ **To cite this version:**

Elie Metchnikoff. On the process of hair turning white. Proceedings of the Royal Society B: Biological Sciences, 1902, 69, pp.156. pasteur-00557969

**HAL Id: pasteur-00557969**
**https://pasteur.hal.science/pasteur-00557969**

Submitted on 20 Jan 2011

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

"On the Process of Hair Turning White." By E. METCHNIKOFF, For. Mem. R.S. Received November 7,—Read November 21, 1901.

Although the fact of hair turning white is a most familiar one, its mechanism has not as yet been unveiled. The authors of works on hair and dermatology acknowledge their ignorance concerning this subject.

Having undertaken a study on atrophic processes, and especially on senile atrophy, my attention has been called to the atrophy of hair pigment so frequent in old people.

Observations on grey hair, or on hair beginning to turn grey, showed me that the atrophy of its pigment is due to the intervention of phagocytes of the hair.

These cells have a single nucleus and their very different aspect one from another is due to numerous amœboid prolongations of their protoplasm. They are derived from the medullary part of the hair and make their way out into its cortical layer, where they absorb the pigment granules, which they then remove from the hair.

If we consider hair, one part of which is already white and the other still pigmented, we find a great many of these phagocytes. They are supplied with greatly developed prolongations and become insinuated between the keratic cells of the peripheral layer.

In absolutely white hair the phagocytes filled with pigment become more and more scarce, and most frequently completely disappear.

It is thus indubitable that the phagocytes of the hairs swallow up the granular pigment of the cortical layer and transfer it elsewhere, the result being the complete whitening of such hair. On observing the root of hair beginning to whiten, we often find a great many phagocytes filled with pigment.

The whitening of the hair of old dogs proceeds by the same mechanism. We equally find here a great number of phagocytes supplied with numerous prolongations and stuffed with pigment granules.

The part played by phagocytes in the whitening of hair explains many phenomena observed long ago, but not as yet sufficiently understood. Thus, hair turning white in a single night, or in a few days, may be explained by the increased activity of hair phagocytes thus enabled to transfer the pigment in so short a time.

The mechanism of the whitening of hair through the agency of phagocytes, allows this case of atrophy to be classed under the general laws of atrophy of solid parts of the organism.

Numérisé par la Médiathèque scientifique de l'Institut Pasteur