

### *The Story of Hair*

The house dog, well fed and comfortably shaggy, lolls peacefully by the fireside, but within him slumbers the wolf. Return him to the forest whence he came. He is a wolf again, his temper ferocious, his hair-growth longer!

What say you now, lady and gentleman, lolling in your comfortable easy chair and bemoaning your falling hair, with the perplexed wail: "And I never felt better in my life!" Yours are the "happy times." But an inexorable law is demanding recompense for your comfort.

## CHAPTER VI

### HAIR AND THE NERVOUS SYSTEM

SUBCONSCIOUSLY, mankind always has associated hairiness with physical strength. It may have derived its belief from the biblical tale of Samson whose strength was gone when Delilah sheared his hair but whose capacity to wreak titanic destruction returned when, in captivity, his hair was permitted to grow long again. It seems apparent to the psychologist, however, that Samson, himself, shared the popular notion that his strength had come from his hair and had gone away with it.

The savage lion, in the child's picture book, in order to fulfill our conception of grandeur, must of necessity be described as having a splendid pelt, and with the stallion of great size is associated a shiny coat and long mane. There is indeed a fundamental connection between hair production and strength, but it is no longer that strength which manifests itself in the lifting of great weights or in the running of the Marathon

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race. It is the *strength of the fundamental forces, the instincts of man's nature and the potency of his nervous energy that are indicated by his hair production.*

The physical inferior may be, and often is, a better hair producer than the physical giant. The champion heavy weight boxer's hair production may actually not exceed more than four and one-half ounces per year—which is the normal hair output of a twentieth century white person, but which amount is often equaled by the anemic adult of the slums. We find that persons suffering from chronic diseases grow hair in exceptional quantities while their limbs waste away; and that the man with the hearty appetite and robust frame, who experiences violent apprehension whenever he steps on a scale, is in most cases not a substantial hair producer.

Every layman has at some time had opportunity to witness a striking example of the interaction between the nervous system and hair in man, or of the fur, bristles, shells and feathers of the animal. The turtle withdraws into its shell, the hedgehog rolls itself within its bristles, the horse lifts his mane and tail, and the fur of

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the house cat stands erect at the menacing approach of danger. Even man, despite his much vaunted culture, throws off the veneer of civilization instinctively when he is faced with imminent danger and expresses himself primitively and subconsciously through his hair. It is not unusual for human hair to stand on end in moments of sudden fear or great shock. Confronted with a terrifying menace to life, the eyes, the ears, or other receptive organs send a warning flash along the nerves to every part of the surface and with this flash the blood retreats to the inner body, the hands tremble, the cheek grows pale, and the muscles of the scalp and skin contract instantly and tighten their grip upon the hair follicles. The hair is held taut. The strain of the contraction raises it from a horizontal to a vertical position, at right angles to the scalp. An instinctive, involuntary, defensive act, and all in an incredibly short moment!

A dog's bark at a child, walking absent-mindedly along the highway, brings the youngster's hand to its heart faster than any command could do, while a crack of a beam in a lonely country house raises gooseflesh over the whole

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body surface of the nervous occupant in an instant. At these moments of extreme terror, and before the tension is relieved, a single hair can only be removed from the scalp by breaking it off. Relief from the shock is always followed by a return of the blood to the surface and consequently a relaxation of the muscles and re-establishment of a normal state.

Rising temper has an opposite effect, especially when the feeling is translated into physical action. In this case, the blood fills the surface arteries which swell in some people to an extraordinary extent. This swelling helps to dilate the muscular grip of the follicles. In the heat of a fight, it is possible to extract almost painlessly a handful of hair from scalp or beard of a person, a feat which would be physically impossible during a shock reaction or even under normal conditions. Experiments made along these lines have disclosed some interesting results. For instance, the healthy looking child here illustrated with rather an exceptional hair growth neared the time of a school examination which made her nervous and apprehensive. Her daily hair loss by natural shedding had hitherto

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been about sixty hairs. As the examination day neared her hair loss became less. The child grew paler and went about shivering, apparently with cold. Efforts to relieve her mind did not have the desired effect and on the morning of the dreaded day her hair fall had dwindled down to three single shafts. Still pale and shivering she came home from school. Had she passed? She did not know and her condition did not improve. The teacher was appealed to and came to visit the child bringing reassuring news. Then followed a hysterical reaction and some fever which kept her in bed for two days, but ten minutes after the school teacher had left the house her hair was brushed for five minutes—with the results that 233 hairs were extracted from their dilated sockets.

Even the conscious will has power with some individuals over their detailed anatomy. The writer knew a man whose control over his organism and his nervous system was so complete that he could raise his hair by sheer will power and could also relax his scalp so completely that his hair might be lifted out of its sockets with a minimum of pull. This was an exceptional

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case, but experiments have shown, however, that every scalp contracts and dilates in response to nervous activity. Feel thoroughly comfortable and relaxed, if only for a few minutes, and your scalp will immediately dilate and relieve its grip on the hair follicles. Assume an attitude of anxiety or intensified energy and the hair is clutched tightly in its sockets.

A curious symptom of pregnancy is the sudden cessation of hair fall. This may occur before the subject herself is aware of her condition, indicating forcibly the tyranny of the instincts over the conscious will. Pregnancy to most women is attended by great nervous agitation due to apprehension of the coming danger. Momentous changes take place in the body from the instant of conception, and before the mind may be aware of it, the nerves have received a message that the security of the organism has been menaced by the presence of a new life within the body. A signal is flashed along the line, and the keenly sensitive outer muscles are brought into protective action. During pregnancy all hair fall gradually stops in spite of all the endeavor of the subject to be at ease and fully con-

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fidant of a successful culmination. It is not until after the event has passed that the muscles of the scalp relax, in response to the diminution of nervous tension, and release their grip so that the hair shedding may begin again. However, the subject may find, much to her amazement, that the hair fall is much greater after childbirth than it had ever been before pregnancy. This happens because, to the normal fall, which may have been formerly from fifty to one hundred hairs each day, is added those thousands of hairs whose fall has been retarded during the nine preceding months.

A similar cessation of hair fall is noticed in many cases of illness. One such case which came under my immediate notice in 1901 in England is worthy of mention. The subject was twenty-eight years old, a cultured and educated woman who had suffered internal pain for several months without being able to define the cause. The patient was of a cheerful disposition and in spite of her suffering was not given to worry and self-pity. She possessed beautiful hair, about twenty-eight inches in length, and her falling hairs, carefully counted, varied from

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fifty to one hundred hairs a day. One day she was examined by a specialist and informed that her affliction was cancer. This information had the effect of diminishing the hair fall immediately, to stop altogether within about three weeks. Through three years of complete invalidism, the hair shedding was not resumed and the length of the hair on her scalp increased from twenty-eight inches to forty-four inches.

Another and still more significant instance of reaction to primary instincts is one which is quite well known to physicians in tuberculosis sanatoria. Tuberculosis is rightly called "consumption" for the sufferer consumes fat more rapidly than the body can produce it. The nervous forces work under a strain and while the body is wasting away, the nerves, vibrating with fear and bringing the body to fever heat are further eating up energy and driving the physique all the faster to its own destruction. Their activity manifests itself in a hectic flush of the cheeks, an abnormal unnatural gleam of the eyes, intensified sexual cravings and in a greatly increased hair growth. This happening testifies that the instinct of self-preservation is



Nervous apprehension in this child contracted the scalp muscles to such a degree that the normal daily shedding of hairs stopped entirely on the eve of a dreaded school examination. After the examination a reaction set in and the hairs fell out in large numbers.

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extending itself to the fullest. It turns effects into causes—destroying the body in the process.

The relationship of the nervous system to the scalp and its covering is constantly illustrated in individual happenings of which we will mention one recently made public.

In the German "Friseur Zeitung," a few months ago, Dr. Gabriel Hofl, professor at the University of Vienna, described an interesting case. The subject was a truck driver whose vehicle collided with an auto after a desperate attempt to prevent it from dashing down an incline against an obstruction. The truck driver realized his danger several seconds before the crash occurred. Although he was in no way injured in the accident which resulted he, nevertheless, lost his speech for several minutes. A few days later he noticed that his hair began to fall out in large quantities. Within two or three weeks he had lost his eyelashes and eyebrows and eventually became quite hairless.

A number of similar cases came under my notice in the course of my thirty years of observation. One subject was a British commanding officer in India. While stationed with his regi-

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ment in Northern India, this officer received a very urgent call at the garrison to set out immediately to aid a distant outpost. He left at the head of a mobile cavalry column and by forced marches arrived at his destination in five days. By that time, the trouble was over and the officer returned to his garrison with his troops. On the march back the colonel noticed an increasing amount of loose hairs in his brushes which continued, according to his own story, with such persistency that within three weeks he was completely bald on head, face and body. Otherwise, he was in normal health. However, during the nine months which elapsed between the beginning of his hair loss and the time of relating his story to the writer, his weight had increased considerably. In the meantime he had seen several specialists, some of whom diagnosed his hair loss as the result of a nervous disorder and others as an infection with some indefinable disease. In relating his story in detail he spoke of riding for days under the burning sun and also most of the nights in a state of great nervous strain, taking hasty nourishment and little sleep.

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Upon arrival at the outpost, having found the danger over, his physical and nervous tension quickly relaxed. He took a dip in the cool pond located in the rear of the officers' quarters. A goodly portion of delicious ice cream followed, adding greatly to his comfort, then a welcome rest—and by the next day he was apparently himself again until the falling hairs informed him that his system had not adjusted itself without compromise to the nervous stress.

The causes for the hair loss of the truck driver and the officer were the same. They were merely an intensifying of the causes which lead to all normal hair loss—namely, the dilating of the follicle. Here we have the truck driver, suddenly seized by terror. Pulsation stopped momentarily owing to a sudden excessive nerve and muscle contraction, as indicated by temporary loss of speech after the accident. Then followed, with an equally sudden snap, relaxation caused by the feeling of relief. The rapid abnormal contraction and relaxation had a temporarily paralytic effect on the dermal muscles, leading to a condition similar in effect to that noted on rubber material after violent expan-

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sion. The scalp and skin lost all grip on the hair follicles and the traction of brush and comb did the rest with an efficiency adequate to deprive the whole body surface of all its hair.

In this category, too, belongs the case of a famous automobile racer who recently broke the world's speed records. This young man, in his early thirties, is completely bald. He claims to have suffered no physical handicaps as a result of the nervous stress of his career as a "speed king"—but his hair tells a different story. He has, since the war, been principally interested in automobile racing and the breaking of speed records. His career involves constant danger to life. A shift of the wind, the veering of his car ten degrees off its course, may cause it to skid in a complete circle. A slight defect of the mechanism may wreck it completely. A tire may burst, the engine explode. All these are possibilities, and he has seen his fellow racers killed when such possibilities became actualities. Yet, in a recent interview, he disclaimed all thought of danger when he entered a race. Some time in his career, nevertheless, the primitive instinctive apprehension of danger asserted

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itself by tightening the grip of the hair follicles and by releasing them again with equal suddenness, just as in the case of the truck driver and the army officer.