Correspondence

Sexual activity and beard growth

Shaving to Impress

SIR,—Your anonymous contributor (*Nature*, May 30, p. 869) has clearly shown that the prospect of a visit to the mainland, with its attendant delights, was associated with an increased yield of shavings from his razor; he attributes this to an effect of anticipation of imminent sexual activity on beard growth. Before accepting this interpretation of his findings, I feel we must ask for two further pieces of information: did the prospect of feminine company cause him to shave more carefully or more closely, and has he conducted the important control experiment of inviting his female accomplice(s) to the island with him ?

Yours faithfully,

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Just Thick-skinned . . . ?

SIR,—Your anonymous correspondent claims (*Nature*, May 30, p. 869) to have shown an association between sexual activity and growth of facial hair. However, he makes no reference to the paper of Verel[1], and I wonder if he knows the phenomenon reported there. Verel showed that the weight of hair removed in shaving is strongly affected by a decrease in skin thickness which takes place in the first two or three hours after changing from a recumbent to an erect posture, and by the corresponding increase in skin thickness which follows a change from erect to recumbent. Could we therefore be told whether the interval between rising and shaving was the same on the day of leaving for the mainland, when your correspondent reported increased "growth" of beard, as on other days ?

Unless allowance has been made for it, the phenomenon described by Verel might also account for the peak in hair "growth" between 8 a.m. and 1 p.m. reported by your correspondent.

Yours faithfully,

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[1] Verel, D., *J. Physiol.*, **130**, 72 (1955).

. . . or Piloerection ?

SIR,—It is a pity to have to detract in any way from Anon's fascinating account of the effects of his sex life on the rate of growth of his beard, but there are other factors to be eliminated before this can be accepted. One of these is illustrated by the old observation that a man's beard may continue to "grow" for some time after death. Such "growth" when it occurs, is evidently due to the shrinkage of the epidermis and dermis following water loss which allows the hairs to protrude further from the skin surface. The water content of living skin is also variable and can affect the degree of protrusion of the hairs. A second complicating factor could be the degree of tension exerted by the follicle erector muscle; the more this muscle contracts, the more vertically the hair stands, and the more the hair protrudes from the skin. If Anon's data are explicable on such grounds, whether in whole or in part, then it must be expected that the Friday peak will be offset by a later fall, and this he has found to be the case on Mondays.

Anon supports his conclusion that the rate of hair growth may vary by the "fact" that beard growth in man is fastest from about 0800 to 1300 h, which means that there is a circadian rhythm. However, this has certainly not been established. Saitoh *et al*[1]. note that the rate of hair growth has been described as faster by day (two references) or by night (three references) or as equal at all times (two references), and from their own experiments they conclude that there is "no significant diurnal variation in the rate of hair growth in man". However, they do support Anon in one particular, namely, that in an individual man there is some day to day variation in the length of the hair protruding from the skin, but in their case the measurements were made on the head hair, which is not susceptible to androgenic stimulus.

Since there is no circadian rhythm the possibility of the "functional interrelationship" of cortisone postulated by Anon does not arise. However, it may be noted that whenever the glucocorticoid hormones have been tested they have tended to inhibit tissue growth and that any suggestion that they may promote hair growth goes against the evidence[2,3].

Regarding the action of the androgenic hormones, Hamilton[4] did not note, as Anon states, "that beard growth could be used as a bioassay for androgens because it was exclusively under testicular control", except in the limited sense that increasing beard growth in puberty is indicative of increasing androgen output. On the contrary, he emphasized the complexity of the situation and stated that in an adult man the growth of the beard "owes far more to genetic predisposition, abetted by age . . . than it does to the quantities of androgens in circulation", that within normal physiological limits androgens have an "almost triggerlike action", and that "the relationship of . . . hair growth to titres of urinary androgens and ketosteroids is poor". In adult male animals Mohn[2] has also found that the androgens do not promote hair growth.

Sexual activity, whether prospective or actual, certainly causes widespread physiological changes, and to select only one, there is a higher secretion rate of the stress hormones. This alone, by leading to an alteration in the flow of blood in the dermal capillaries, could alter the degree of hydration of the dermis, and by increasing the tension in the follicle erector muscles, could increase the proportion of the hair shaft that protrudes from the skin. Anon himself notes that tension, anxiety and nervousness, which are forms of stress, were all associated with increased beard "growth". Certainly Anon's data mean something, and that something is likely to be interesting, but several possible alternative explanations must be carefully eliminated before his conclusions can be accepted.

Yours faithfully,

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[1] Saitoh, M., Uzuka, M., Sakamoto, M., and Kobori, T., in *Advances in Biology of Skin*, **9** (Pergamon Press, New York, 1969).

[2] Mohn, M. P., in *The Biology of Hair Growth* (Academic Press, New York, 1958).

[3] Bullough, W. S., *The Evolution of Differentiation* (Academic Press, London, 1967).

[4] Hamilton, J. B., in *The Biology of Hair Growth* (Academic Press, New York, 1958).