

VI. *A Second Letter from Mr. Antony Van Leeuwenhoek, F. R. S. to John Chamberlayne, Esq; F. R. S. upon the same Subject as the former.*

S I R,

SINCE the Communicating to You my last Thoughts and Observations concerning Razors some Weeks ago, I have often view'd the Hairs of my Chin with a Microscope after they were cut off, and always observed upon the White or Grey Hairs the Streaks which are made by the small Notches that, as I told you in my former, I had discover'd in my Razor, especially when those Hairs were Cut more obliquely than usual; for in such Hairs I have often seen above twelve Streaks, occasion'd by so many Notches that were in the Razor, all within the Compass of a Hair's breadth.

Because I would not trust wholly to my own Judgment, I caus'd a Man of good Understanding to view several Hairs through a Microscope; and I ask'd him, how many little Streaks he observed in the Cut of one of those Hairs? Who answer'd me, Twelve.

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Among some of those little Hairs I had shav'd off my Chin, I discover'd several whose Roots were intire, but could not perceive that they had been touch'd by the Razor: this seem'd to me at first very strange, because I had always imagin'd, that the Hair of the Head and Face did not change or fall off, like that of other Parts of the Body. But I consider'd how much the Skin is softned by warm Water and hard rubbing, and that the Notches in the Razor, which by reason of their smallness escaped the naked Eye, when they meet with such Hairs, are not capable of Cutting off the Hair, but rather tear it out by the Root; which also may be the Cause of the Pain or Smart that one feels, when one is shaved with an indifferent Razor. I view'd some of those little Hairs that had the Roots on, and observed the sides of them to be a little Tore or Mangled; which I suppose might be occasion'd by the Notch of the Razor, that had laid hold of the Hair in that Part, and so pull'd it out.

I have moreover busy'd my self in observing the Muscles of the Cod-fish, and observed that none of the small Particles, that compose the said Muscles, were thicker than the single Hair of a Man's Chin; but they were of several sizes, some of them being not half so big as others. When the Parts of the Fish were dry, I cut some of these Muscles across with a Razor, which I set and prepared after the manner mention'd in my former Letter; and I observed in some of those Muscles so cut, as many small Streaks as there were Notches (invisible indeed to the naked Eye) in the aforesaid Razor, insomuch that we who observ'd it were amazed at it:

it. And as every Particle of the Muscle of the aforesaid Fish is composed, as I have formerly observed, of an unspeakable number of long slender Particles, so every little Notch of the Razor, did not only make a little Streak in the Muscle, to which it was apply'd, but also caused such a Roughness in it, that one might discover the exceeding slender Particles, of which one of the long Particles, no thicker than a course Hair, is composed: Notwithstanding that the small long Particles, dry'd up so quick, that one shou'd have taken them for a solid Body.

For my further satisfaction, I sent a clean Towel to a Burgher of this Place, who being about Fifty Years old, had grey Hairs on his Chin, intreating him that when he was next Shav'd, he wou'd let his Barber wipe the Razor upon the said Towel.

Having viewed some of these Hairs thro' my Microscope, I discover'd the Streaks that the Razor had made therein, as plainly as those which I mentioned before of my own, although the said Burgher told me, that he had not been shaved in a long time so softly and easily as then.

I observed in the said Hair a great many little ones whose Roots were compleat; and amongst a great many of them of different Figures, I observed one Hair that had three sides with roundish Angles, and that all the three sides bended inwardly.

I sent another Towel to another Burgher of about Sixty Years, to the end that I might likewise observe his Hairs; in which also I discover'd the little Streaks occasion'd by the Notches of another
Razor,

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Razor, but with this Difference, that the Streaks in the last Hair were finer than the former, which I only attribute to the last Razor's being set upon a better Hone: Among these Hairs also I found some that had their compleat Roots. I shall conclude here, and remain,

Honoured Sir,

Delft, Nov. 22:
1709.

Your most Humble Servant,

Antony van Leeuwenhoek.